G R S 58]

Previous references

1909

(Edu)

File No 462—

Serial Nos 2 6, 9 10 14— and 24

Later references

Edn 21—No 27 33

" 23-19-12

" 310-19-2

Edn 48-20-15 & 30

" 11-23 (7 + 12)

" 38-29-9, 11-15

GENERAL AND REVENUE SECRETARIAT

Edn 137-33 (1-6)

Serial Nos 2, 6-10, 14-19 and 24

Part B for April 1913

SUBJECT

Improvement of Industrial and Technical Education in the State

---

Sl 24 To the Dy Dir of Education

" " Chief Engineer

" " Secy Eco Conference

" " President Mysore City Mun

" " Comptroller

" " Electrical Engineer.

No 8836-110 Dt 1-5-13

Edn 162-09-24

passed orders on the subject

Industrial and Technical

NOTES

GPB—10,000—28-9-15

No C 139
14 11 09

1909 10

GENERAL AND REVENUE SECRETARIAT

(Education)

NOTES

File No 462/09

FILE HEADING

Improvement of Montreal Education in the State

From

No	Dated	Received

Diary No	Encls	Spare Copies	Serial No

BRIEF ABSTRACT OF LETTER

NOTES AND ORDERS

G R S 12]
General and Revenue Secretariat

File No 462 of 190 9-10

Serial No

Industrial Education

As stated already, I think that it is essential to consider the question of Industrial Schools — how they should be conducted according to a comprehensive programme, and what defined courses of training should be followed &c — and to arrive at a definite plan and policy

2 I would suggest that a committee may be appointed consisting of the following gentlemen

Mr M Visvesvarayya (President)
~~Mr Meagamuth~~
Mr J Weir
Mr V Rangasami Iyengar
Mr C Krishna Rao
Mr Subbusami Iyer

3 About 6 months may be fixed as the period within which they should submit a report

Dewan

24/4/10

GPB—50 000—18 5 08

4 (It will be necessary to

Serial No

Consult if these Officers can manage to take up the work conveniently before issuing the order of Govt.

24/4/10

5 Dewan

5-8-16 / 26-4-10 6 Lapee

25/4/10

7 Under Secy Govt (Edn)

Please consult the gentlemen do whether they will serve on the Committee

29/4/10

8 A draft G O is submitted for approval I beg to suggest for consideration, whether the following additional members may be included in the Committee - Mr A Ranganathan Deputy Rev Comr, Dr P S Achyuta Rao Supdt Central Jail, the former as having a wide knowledge of the Industries in the State and the requirements in the matter of Industrial Education, and the latter being a superintendent of some industries in the jail, in a way, and having some

G R S 12]
General and Revenue Secretariat

File No 462 of 1909

Serial No

personal knowledge of the industries carried on in some very important parts outside the province

2nd Councillor) 30/4/10

3441

9 By adding more names, I fear we shall contribute to delay in disposal &c Please consult the officers named & then we may see—

30/4/10

Replies received—to be sent to the Sub-Committee along with this file after it is received back

27/5/10

10 Issue draft D.O.

4/5/10

~~Draft approved, the Committee approved.~~

NOTE—Contn sheet

GRS 12]
General and Revenue Secretariat

Edn File No 462 of 1909-10.

Serial No

11. All the 5 officers have expressed their willingness to serve on the Committee for the improvement of Industrial education in Mysore Edn file No 462-09 re the appointment of a Committee for improvement of Ind. Schools has been put up in connection with the file re the Revision of the Curricula of Village Elementary Schools so as to provide practical instruction in them and Submitted to Dewan

Kw 12
10/7/10

Sub to 2nd Councillor for perusal May the return of the file be awaited

10/7/10

83

13) May be awaited

I do not see Mr Viresvaraya's reply here

10/7/10

The replies from Messrs Viresvarayya and Krishna Rao are herewith put up and Sub

10/7/10

Seen -

10/7/10

The matter

NOTE—Continue sheet

GPB—55 000—27 4 09

-17/10

Serial No

has been pending very long without disposal. Please get the file back & put up an order appointing the Committee

29/8/10

14) To Undersecretary with Dewan for kindly put file 462-09, for complying with the 2nd O's instructions as above

29 8 10

15) Draft order is submitted. The Committee may perhaps be authorised to inspect some of the Indl. Schools, if necessary?

9/9/10

(Secretary)

10/9/10

16) The draft order may be approved —

2nd O

28/9/10

Dewan

18

8193
2/10/10

NOTE—Contn sheet

R. 12]
General and Revenue Secretariat

Edn. File No 462 of 1909-10

Serial No

To the Chief Secy
Govt of Mds
Mr. V Ramaswamy Iyengar
" C Krishna Rao
" G Subbiswamy Iyer

G.O No 3585-9 R 29/10/10

Appoints a Committee consisting of the above 5 Gentlemen for considering the question of improving the Indl. Schools in the State and requests the Committee to submit their report in the matter within 6 months if possible.

6 From the President of the Committee for Indl. Schools
No 19 R 29/4/11

States that the report of the Committee could not be sub within 6 months as Mr. Wew. is absent on privilege leave & that it will be submitted by the end of August 1911.

19 Submit for information.

Mr. 33 8/5/11 — 8/5/11 — 6/5/11 — 9/5/11

NOTE—Cont. on sheet

GPB—551—2740 20

Serial No

21 The report expected by the end of August 1911 has not yet been received
Submitted with a draft reminder
8/9 C(26)
5 9 11 (15)
22 Some for 6/9/11

8 To the President, Industrial Schools Committee, Bangalore, no 2096 dt 13 9
Enquires when the report may be expected here.

9 From the same dt no 8530 dt 16-9-11
States that the work of the committee was interrupted first by the absence of Mr Wen on leave and for a second time by his death, and expects the Committee to be able to submit the report by 31st Oct or 15th Nov next at latest

23 Submit the report may be awaited till then
8/9 C(26) 15th November 1911
20 9 11 19 11

24 Seen
for perusal
21-9 11

25 2nd C

26 Seen
25/9/11
28/9/11

P.T.O

2650

G R S 12]
General and Revenue Secretariat

File No 462 of 1909-10

Serial No 10

From the Committee for improvement of Indl education.

No 441 R 16/11/11

Forwards proposals for the improvement of Indl and technical education in the State.

27 The Committee say that their proposals will be circulated to Govt officers and gentlemen interested in the subject for their suggestions if any. They propose to revise their present proposals and submit a final report in January or February next after knowing the opinions of experts in the subject.

Submd

Sec) 21/11/11

21/11/11

28 No orders necessary till final report is received.

13/1/12

29 The final report has not yet been received submd with a reminder DV

May be awaited

25/3/12

NOTE—Contn sheet

Serial No 14

From the Chairman of the Industrial Schools Committee No 3641 g 8 5 1912
Requests that the Proc Secy of the Economic Conference may be authorized to place the scheme referred to in SC No 10 before the next conference, for discussion and consideration by that body, and that the Education Committee be also requested to go into the matter to facilitate work

31 Submitted with a draft

Hr (158) Mw 13 5 1912 — Secy

13/5/12

32 The object of the discussion at the next meeting of the conference is not clear - The I S Committee may complete its report & then the matter maybe considered by the Education Committee of the Conference The latter has postponed consideration of the subject pending the report of the I S Committee

1812 Secy

CSB 13/5/12

33 I think that it is irregular for the Committee to place the subject before the Conference. The Committee is a body independent-

Pa 161

Serial No

ent of the Conference and it seems to me it was hardly necessary for Govt to have circulated the preliminary report or canvassed for other opinions & criticisms - All this might have been left to Govt to do

34 The Education Committee will take up the subject after the next sitting of the Conference There is no time to do so before the next Session

1409
21/5/12

35 The "Scheme" now sent up is apparently tentative, & the Chairman of the Committee himself calls it but a "Draft" - I see it is one of the items in the Agenda for the Conference a Mutt day Report 1912 - Let us wait & see

16/5/12

[Pokhong Mutt 27 days or 5 June]

36 The Economic Conference Mutt

1127 12

R S 12]

General and Revenue Secretariat

File No 462 of 1909-10

Serial No

Resolved that the Special Committee's Report should be considered by the Govr in Council — Let a letter be addressed to the Secy of the Corpn asking him to place the subject before the Govr Committee

(8) [illegible]

23/12/6

B I V 23/29/6

37 [illegible]

33 4/7/12

60 38 1st Councillor) 1/7/12

39 Draft appd by 1st Councillor 7/7/12

25/4/7

40 Issue 4/7/12

15 To the Provisional Secy to the Economic Conference no 298 of 9/7/12 — forwards a copy of the draft report

NOTE — Co tn sheet

R S 12]

General and Revenue Secretariat

G.O.(Ms) File No 462 of 1909-10

Serial No	
	to be placed before the Education Committee of the Conference
16	From the Chairman of the Indl. School Committee No 6091/2257/11 states that the Draft Scheme for the improvement of industrial education is being finally revised by the Committee and that the selection of works and the suggestions to be put forward for practical action will depend upon the amount that Govt may provide for the purpose and requests therefore to be informed what amount Govt is likely to set apart for technical education during the current and the next two years. Submitted for orders A sum of Rs 60,000 has been provided in the current year's budget for improvement of technical education

Sd/- (illegible) Secy)

Dr 27/7/12

NOTE—Co tn sheet

G. R S 12]

General and Revenue Secretariat

File No 462 of 1909-10

Serial No

42 A reply may be sent that sum of Rs 60 000 has been provided in the Budget for ~~industrial~~ technical Education during the current year and we have not decided as to what amount should be set apart for the purpose in the subsequent years & cannot therefore give the information asked for by the ~~Chief Engineer~~ Chairman of the Industrial Committee ~~for~~ about the grant for the next ~~two or~~ three years

43 2. In para 3 of the Chairman's letter it is said that Mr Chatterton is of opinion that the industrial Education work, at least in the cities of Bangalore & Mysore should be under the control of officers responsible for the development of industries & commerce in the State. Who are these officers? What is the control which they ~~the~~ ~~[illegible]~~ it ~~can~~ have over industrial Education. On these points the Chairman is not explicit. He may be asked to state his views on the question more clearly.

1st Curator

Devan

27/7/12

12

347

NOTE—Contn sheet

G. R S 12]

General and Revenue Secretariat

File No 462 of 1911-12

Serial No

44 I agree with the Secretary The Committee may submit its report and state also what sums they require as a necessary allotment, for the present as well as future years Govt will pass orders on the report on these as well as on other matters involved

29/7/12

45 Yes — [Early]

46 Put up copy — please

47 Draft — Sanction

14/8/12

48 1st Cancelled

15-7-12

2575
30/7/12

NOTE—Contn sheet

[G R S 12]

General and Revenue Secretariat

File No 462 of 1909-10

Serial No

49 Draft appd by 1st Councillor 16 8 12

50 Sanctioned 19/8

17 To the chairman, Industrial School Committee no 1657 & 20 8 12

States that a sum of Rs 60000 has been sanctioned in the current year's budget for technical edn, of which Rs 5000 is for capital cost & Rs 10000 for recurring expenditure and calls for the committee's final report stating what sums they require as a necessary allotment for the present as well as future years

18 From the Committee for Indl Edn No 86 & 17/9/12

Submits a detailed report containing a scheme for technical education in the State

51 Submd for orders

52 Secy)

18/9/12

19 9 12

53 1st Councillor

20/9/12

NOTE—Contn sheet

R S 12]

General and Revenue Secretariat

Edu File No 462 of 1909-10

Serial No

Copy of Proceedings of Edn Committee is put up

54 I believe there is a Commn from the Edn Committee of the Conference about this Please put up ~~both~~ both together

20/9/12

55 I have considered this in detail in the Edn Committee & the resolutions therein passed represent my views The report of the Committee as modified by those views may be adopted & a G.O. issued in accordance therewith. Please put up a draft & submit to Dewan as early as possible.

3/10/12

23/10

NOTE – Co tn sheet

(G R S 12)

General and Revenue Secretariat

Edn File No 462 of 1909-10

7

Serial No 19

From the Provincial Secretary, Economic Conference

No 843 R 20/9/12

Forwards a copy of ~~the Draft Report~~ letter No 59 R 57/9/12 from the Secy to the Edn Committee of the Economic Conference submitting copy of the Resolution of the Edn Committee on the Scheme for improvement of Indl education

56 The file on the subject of the improvement of technical education in the State has been sent to Ind Committee

57 Secy) 27/9/12

21/10/12

58 1st Consider

TV Since recd

4/10

NOTE—Contn sheet

G1B—6 000—1-6 12

P S 13]

General and Revenue Secretariat

Edu File No 462 of 1909-10

Serial No

59 Draft is submitted Por II will have to be consulted

SP 7-126
7 10 12 Secretary 9 10 12

60 1st Annakan
1 Dewan

61 23 9/10

44/-/12

23 14/10

3946
12 10 12

NOTE—Contn sheet

Serial No

Circulated to Councillors for perusal and opinion

2 If it be considered more convenient to have a discussion of the subject at a Council Meeting it may be included in the agenda for the next meeting The collection here below consists of -

(1) Education File No 462 (Improvement of Industrial Education in the State)

(2) G L File No 55 (Creation of a department of Industries and Commerce) and

(3) the file relating to the question of extending the services of Mr Chatterton for a period of 3½ years

3 These files have more or less an intimate bearing upon the scheme of technical education to be adopted in Mysore for the next few years and of the allied subject of constituting a department of Industries and Commerce the presiding officer of which would very properly be placed in charge of the Industrial education and the idea is to extend the services of Mr Alfred Chatterton in this behalf The terms upon which he is willing to serve are contained in his letter dated 12th October 1912 to the address of Mr Visvesvaraya

A

4 By Government order dated 28th October 1910 a committee was appointed to consider upon a scheme for technical education in Mysore This scheme drawn up by the gentlemen named in the margin has been considered and reported upon by the Educational Committee

M Visvesvaraya Esqr
V Rangaswamy Iyengar Esqr
C Krishna Rao Esqr
G Subbaswami Iyer Esqr

Note—C tn sh t

G R S 12]
General and Revenue Secretariat

File No 462 of 1909-10

Serial No

Committee of the Economic Conference, by the Committ for Industries and Commerce of the Economic Conferen and by individ officers and gentlemen marginally shown and also by Mr Chatterton

J S Chakravarti Esqr
C H Yates Esqr
M Muthannah Esqr
M Shama Rao Esqr
P R T Wetherall Esqr
H J Bhabha Esqr
D Venkataramayya Esqr

closure 92 (1)

5 The trend of opinion is that the scheme is very good as an ideal to be reached in years to come but that practical action towards reaching that ideal has to be taken on a much smaller scale as generally indicated in Mr Chakravarti's note and particularized with some emphasis in Mr Chatterton's note

6 A valuable light is thrown on the whole subject by the report just published of a Committee appointed in Madras in January 1912 to consider the question of improving the Industrial and Technical education in the north of Madras I would strongly recommend the formation of a department of industries under Mr Chatterton as Director to give effect to Mr Chatterton's proposals A budget will have to be framed and a budget grant sanctioned and I have little doubt that the funds required for the next two or three years could be found from current revenues

Published with Madras Government Order No 776 dated 24th August 1912

Circulate

23/9/11

12/11/12

NOTE—Contn sheet

CPB—50 000—12 8 10

R S 12]

General and Revenue Secretariat

File No 462 of 1912

Serial No

by Circulated to Councillors

23

To

19/11/12

2nd Councillor

23
20/11

To Owing to the sad & unfortunate death of the 2nd Councillor in Devaning his file which was with him is submitted for the order of the Dewan

23
22/12/12

602
23/12/12

Dewan

NOTE—Contn sheet

GRS 13]

1874 22

Routine Notes.

[To be used only for notes requisitions etc not intended for permanent record]

73 Submit to Secy

The Secretary decided that the file might now be circulated to the Dy Commissioner and brought up at an early meeting of the Council

lea
8 1813

Q Mrs 264 of 12
Q

74 2nd Commissioner

Recd 9/1/13

8/1/13

75 Secy
9/1/13
Ulk

N B—Should routine notes be written on small slips these must be pasted on this form

76 A Copy of P.O. No. Q 4231-78/Q dn 55-12-CCS-Q 30/1/13 may the file be sent to Sec IV
yes
10/2/13

Branch IV

GPB—25 000—23 7 12

10/2/13

to Sec IV

R S 12]

General and Revenue Secretariat

Govt File No 462 of 1929-30

Serial No 77

Submitted This file has been received back from Branch V with a copy of G.O No G 4231-78/Gen 55-12-115 dt 30/1/13 Constituting a Deptt of Commerce & Industries In this order the letter No 343 dt 20/9/12 from the Personal Secy, Economic Conference, Submitting the Views of the Conference on the proposals of the Committee for the Improvement of Indl Edn, has been read but no specific orders have been passed regarding the general recommendations including the utilization of the special grant of Rs 6000 sanctioned in the current year's Govt Budget for improvement of Indl education A draft passing orders on these recommendations which has been approved by the Ld Councillor is in the file

Hm 83 11/2/13

78 The G O of 30th Jan/13 constituting the department of Industries and Commerce and appointing the Director, does not touch upon the points chiefly dealt with in this file, an

A 0

Dt No 19 in the ~~[illegible]~~ file.

NOTE—Contn sheet

R S 12]

General and Revenue Secretariat | File No 462 of 1909-10

Serial No

and embodied in the draft G O prepared in accordance with the 1st Councillors orders at para 55, page 16 above. The draft sanctions the distribution of the provision of Rs 60,000 in the current year's budget for technical education and appoints a Committee to work out the scheme and submit suitable proposals

79 Secretary 11 2 13

1st Councilor

80

Resubmitted for orders

In the linked file GO 266 of 12-13 the initial and recurring charges of the Mechanical Engineering School ~~proposed~~ recommended to be established in Bangalore, are proposed to be met from the provision of Rs 60,000 referred to in these ~~file~~ notes. The issue of the draft order in this file may perhaps therefore be unnecessary or may be deferred

Secretary 19 2 13

Submitted for orders

1st Councilor

NOTE—Contn sheet

1876

R S 12]

General and Revenue Secretariat

File No 462 of 1909-10

Serial No

87 I do not think there is any use in passing the order as drafted. Nor do I think there is any need for another Committee.

88 The file may be sent up again after the proposal about the Engg. School in Bangalore is disposed of.

23/2/13

25/2

Financial Secretary's opinion as per typed note on linked file No Edn 266e--12 dated 5-3-13

NOTE—Contn sheet

5-3-86
5-95-9/84

R S 12]

General and Revenue Secretariat

File No 462 of 1919-10

Serial No

I submit herewith a typed draft of a Govt order proposed to be issued on the subject of Industrial & Technical education and also passing orders on the ~~Dy~~ proposals of the D G of Education re the opening of a Mechanical Engineering school, & a Commercial school ~~&~~ in Bangalore & the reorganisation of the Chamarajpura Technical Institute in Mysore.

It will be recollected that the draft was discussed yesterday morning at a meeting of the Dewan the Councillors & the D G of Education

One point connected with the draft order requires elucidation, re to what funds the increased charge should be debited. At present the Engineering & Industrial Schools are ~~treated as~~ paid for from Local Fund General, but it is doubtful if the Funds can bear any increased burden. A better course seems to be to treat these institutions as ~~[illegible]~~ regular ~~as~~ State Fund institutions & ~~treat~~ charge a certain amount to L F- General as a Contr

NOTE—Contn sheet

R S 121

General and Revenue Secretariat

File No 462 of 1909-10

Serial No

-bution to State funds for educational purposes, if the whole cost cannot be met from State funds & L-7 general utilised for other beneficial & necessary purposes

The files re the Mechanical Engineering School, Commercial School & report on Technical Education are submitted herewith They have all been noted upon by the Fin Secy

The proposals re the Chama-rajendra Technical Institute in the file - embodied in the draft order - were received from the I & Ofdn with a Do letter & these have not yet had the benefit of criticism at the hands of the Fin Secy

184C

CSB
3/4/13

The draft is approved

5/4/13

(The Commercial School in Bangalore is conceived on a more costly plan than is necessary)

NOTE—Contn sheet

G I E—65 COC—1 C 1

at the beginning But that is not a serious objection, and where education is concerned, we need not be over cautious in respect of outlay).

5/4/13

To the Fin'l Secretary for favour of his info.

11 4 13

2443
17 4 13

Tel nos
1196-n

The total recurring cost of these schemes will be 83,000 (a) Rs while the non recurring cost will be 61 000 (b) Rs

Secy)

12 4 13

(a) ~~Was only~~ Or 52000? About 31 000 being the present expenditure on the Mysore Industrial and Engineering schools should be deducted to arrive at the extra cost

(b) The more correct figure is 74000 including 13 000 for working expenses of the Chamrajendra Institute workshop which though technically an advance is for all ~~practical~~ purposes final expenditure.

15/4/13

A typed note is placed below

PJ 6

NOTE—Contn sheet

R S 12]

General and Revenue Secretariat

File No of 191

Serial No

in accordance with Dewans order of 11 4 13

The file reached me on the 14th -

M
15/4/13

NOTE—Contn sheet

Financial Secretary's Note on Educational Draft Board in Technical Education

---

A draft prepared by the Economic Secretary has been kindly sent to me for remarks

2 The draft contains orders on several important matters some of which were separately considered before in different files To avoid repetition a reference to some of my previous notes is made in the present memorandum It is respectfully requested that the points represented in those notes may be taken into consideration in passing orders

3 The four important points dealt with in this note are

(a) General approval of the Report of the Committee appointed in Government Order No 3585-9/Ldn 462-09-2 dated 28th October 1910

(b) Establishment of the Chamarajendra Technical Institute at Mysore

(c) Establishment of a Commercial High School at Bangalore

(d) Establishment of a Mechanical Engineering School at Bangalore

Remarks on each of these points are recorded below As regards other points in the draft there is nothing to be said The second sentence of para 8 may perhaps be omitted

4 General approval of the report of the Committee appointed in 1910

On this point my views are contained in the note dated 1st April 1912 a printed copy of which is in the Technical Educat on report file As explained in that note, some of the proposals of that Committee appear o me unnecessarily ambi ious and too costly to find a place in a practical programme for the State under the present circumstances

5 It is observed in the present draft "that in the immediate future some parts of the scheme should be put into operation at a moderate outlay and in a tentative manner so as to find out how far the advanced instructa ~~education~~ will be taken advantage of before giving effect to the more costly proposals "

In this view I have nothing further to say about this par of the draft

(b) Establishment of the Chamarajendra Technical Institute in Mysore

6 The general scheme of the Institute as laid down in paragraphs 33--48 of the Technical Education Report

Report was dealt with by me in paragraphs 6 to 12 of my note of 1st April 1912

The present scheme differs from the one contemplated by the Committee and my suggestions with reference to it are given below

7 There is provision for two highly paid officers in the Institution one as Headmaster of the Engineering School and the other as Superintendent of the Industries and Crafts Section For smooth management and for economy as well it will perhaps be better to make one officer Superintendent for the whole Institute The Headmaster of the Engineering School if a suitable selection is made can be the Superintendent as well and exercise general supervision over the Industries and Crafts Section As there is provision for an Assistant Superintendent of the Industrial Section on Rs 125 per mensem and as a fairly strong office staff is provided, this arrangement seems possible

A good suggestion worth considering & copies of paragraphs
[illegible]

8 A sum of Rs 12,000 per annum is provided for scholarships for the Industries and Crafts Section and a sum of Rs 2,160 per annum for scholarships for the Fine Arts Section The

Here may we leave this provision for the Bombay Government & have received consideration of the Industrial Institute when Bombay Government
[illegible]

necessity

necessity for such a large provision is not apparent As regards the provision of Rs 180 per mensem for the Fine Arts Section, the details are given in the "preliminary report" thus

20	scholarships	at Rs 2 p m	40
20	,,	at Rs 4 p m	80
10	,,	at Rs 6 p m	60
			180

But for Rs 1,000 p m required for the Industries and Crafts Section no details are furnished

As suggested by me in my note of 1s April 1912 the total amount of scholarship to be given in the Institute should be limited to Rs 500 p m

9 It is not clear if the opening of the Commercial class in the Chamarajendra Technical Institute cannot be postponed for some time Similar classes are being opened in Bangalore and some experience of the popularity and utility of such classes may be gained in Bangalore before the classes are opened at Mysore The subjects to be taught are typewriting, shorthand, commercial arithmetic commercial geography etc and as far as can be made out the training given is that required for clerks in commercial ~~classes~~ offices It

the opening of a Commercial class in the C T School at Mysore seems premature which may be awaited for some time to supply with the demand

It is doubtful whether even at present there is any want of men with such qualifications and the Bangalore classes will further increase the supply

10 If my suggestions about the Chamarajendra Technical Institute are favourably considered, the following reduction in the proposed recurring expenditure per annum will result

Combining the Headmastership of the Engineering Section with the Superintendentship	Rs 3,600
Scholarships Rs 500 a month instead of Rs 1,180	8,160
Commercial classes	3,000
T o t a l	Rs 14,760

or say a reduction of Rs 15,000 per annum

In connection with the commercial classes there will also be a reduction of Rs 6,000 under non-recurring charges

(c) Establishment of a Commercial School at Bangalore

11 On this point I had an opportunity of expressing my opinion on the original scheme of the Inspector-General of Education Kindly see my note dated 7th March 1913 on the subject, in which a

simplified

simplified and less expensive scheme was suggested

12 It was pointed out in that note that a separate so-called "Commercial School" was not necessary All that was aimed at by Government can be secured by appointing competent teachers to teach commercial subjects in the Bangalore High School Such commercial subjects are included in the list of optional subjects in the School Final course Regular students of the High School who want to take up commercial optional subjects and outsiders also may be admitted to these commercial classes

13 If Government approve of this simplified scheme of Commercial classes instead of a separate School there will be very little additional recurring charges besides the pay of teachers on commercial subjects and honoraria for special courses of lectures The total recurring expenditure will not be more than Rs 5,000 per annum or about Rs 6,000 per annum less than the proposed figure

For spreading commercial education, men with a certain degree of general education should be taken up and dealt with in special classes It is not easy to see why Elementary lessons in

We urge perhaps begin with commercial classes, which may eventually be raised into a separate School as the demand for such education increases
WM

in English or Vernacular should be imparted in such classes

(d) Establishment of a Mechanical Engineering School at Bangalore

14 This subject also came to me once before and my views on the subject are contained in my note dated 5th March 1912 in the file relating to the subject

15 I still adhere to the opinion that the proposal to open an Elementary Mechanical Engineering School in Bangalore is against the general scheme laid down in the report of the Technical Education Committee which is to be generally approved by Government Under the Committee's scheme, Mechanical Engineering of the type to be taught in the proposed school should form one of the branches of the Chamarajendra Technical Institute at Mysore

The idea of the Chamarajendra Technical Institute developing as a central and comprehensive institution for Secondary Technical Education in the State is so attractive to me that I venture to represent this point once again

16 But perhaps the advantages of locating such a school at Bangalore

are

are great owing to the presence of the Public Works and the Electrical Department workshops Whether these advantages would outweigh the advantages of locating the Mechanical Engineering School along with the Civil Engineering School and the Industrial School at Mysore seems to me doubtful, but if expert opinion is in favour of ~~Mysore~~ Bangalore I have nothing to say

17 As regards the proposed scale of recurring expenditure I have only two points to suggest

(a) Whether in view of there being three maistries on Rs 50,40, and 35, the Shop Instructor could not be merged in the Superin endent Moreover, "the teacher in the class-room" on Rs 75 should also be able to instruct in the workshop

(b) Whether as many scholarships as proposed at Rs 8 need be given If the demand for mechanics be great - and the profession remunerative why should it be necessary to draw students by stipends? The number of stipends may be reduced to one-third and the rate reduced to Rs 5 p m

If these suggestions are approved

approved, the proposed recurring charges of the Mechanical Engineering School would be reduced by about Rs 6,000/-

18 The total increased expenditure proposed in the draft is worked out below in round figures

	Recurring	Non-recurring	Recurring	Non-recurring
Chamarajendra Technical Institute				
Total expenditure proposed				
	Recurring	Non-recurring		
Engineering Section	11,000			
Industries & Crafts	32,200	10,000		
Fine Arts	5,300			
Commercial School	3,000	6,000		
Workshop		28,000		
Allowance to Secretary	600			
	52,100	44,000		
Deduct				
Present cost of Mysore Engineering and Industrial Schools say	31,100			
	21,000	44,000	21,000	44,000
Commercial School, Bangalore			11,000	6,000
Mechanical Engineering School, Bangalore			20,000	24,000
			52,000	74,000

19 If the suggestions contained in the foregoing paragraphs be approved, the net additional expenditure will be about Rs 25,000 under recurring and about 68,000 under non-recurring expenditure in respect of the institutions dealt with in the draft under consideration

20 of

20 Of course it is not possible to meet the extra charges from the Local Funds General Expenditure in connection with all these institutions dealt with in the draft will have to be treated as appertaining to the General Revenues A contribution of Rs 32,000--the present rate of expenditure on the Mysore Industrial School and Engineering Schools--may be ordered to be paid from the Local Funds General to State Funds This will be a temporary expedient until we effect a satisfactory readjustment of the Local Funds which has become very necessary especially in view of the condition of the Village School Fund A paragraph to this effect may be added to the draft

Is this necessary? [illegible]

21 The order in its present form specially as regards the documents read at the beginning is a very long one and is likely to be confusing for purposes of working and reference It is a matter for consideration whether for the convenience of the several institutions dealt with in the draft, which for purposes of management are quite independent of one another separate orders should

[illegible]

should not be issued in respect of each One order on the general subject of Technical Education and a separate order relating to each of the institutions proposed would perhaps be better and clearer

J B Chakravarti
16 4 1913

Please circulate to 2nd Consultee also. The papers may be submitted to Secy Department on the 18th next if possible

16 4 13

Recd 6 30 pm
16/4/13

2585
19 4 13

I have made my remarks marginally upon the H Secy's note

17/4/13

Submitted to His Highness

I submit herewith, for His Highness' approval the draft of a Government Order which it is proposed to issue on the following reports and proposals -

(1) Report by the Committee on Technical Education in Mysore

(2) Establishment of the Chamarajendra Technical Institute in Mysore

(3) Establishment of a Commercial High School at Bangalore

(4) Establishment of a Technical Engineering School at Bangalore

2 The whole subject was fully discussed by the Councillors and myself with the Inspector General of Education and the draft embodies the conclusions we were able to arrive at finally The first Councillor and the Inspector General of Education have taken great pains in working out the details of these important schemes The Chief Engineer the Deputy Chief Engineer and Mr. Ranganathan Iyengar Superintending Engineer, have also been consulted The last named officer has taken a special interest in preparing detailed reports

3 The Financial Secretary approves generally of the scheme but makes some suggestions regarding details He is of opinion that two highly paid officers one as Head Master of the Engineering School and the other as Superintendent of the Industries and Craft Section in the Chamarajendra Technical Institute Mysore are not necessary The two branches of education are distinct and it would be difficult to secure the services of an officer who could control and direct them both The arrangement is moreover tentative and may be altered if experience proves that the two posts can be conveniently combined He is also of opinion that the sum now provided for scholarships namely, Rs

Rs 12,000 per annum for the Industries and Craft Section and R 2 160 for the Fine Arts Section are excessive As proposed by the Financial Secretary the amounts to be awarded as scholarships in the institute will be restricted to R 500 per mensem It is desirable that a system of payment to pupils under training for the work done should be introduced and this will enable us to curtail the amount given as scholarships

4 The Financial Secretary also considers that the opening of a separate Commercial School at Bangalore and of commercial classes in the Chamarajendra Technical Institute is not necessary The necessity for special commercial training is now recognized in all advanced countries The very life of the people there has a commercial basis and in order to draw attention prominently to the importance of commercial training and to spread the benefits of commercial education I feel convinced of the need for starting such a school In European countries they are not content with schools they have Commercial Universities

E
page 4)

5 The establishment proposed for each school has been carefully examined and the scale proposed may be sanctioned Alterations will be made if necessary after further experience

6 There need not be any hesitation in sanctioning all the three institutions immediately They form the first instalment of the scheme of Technical Education drawn up for the State The entire scheme is estimated to cost Rs 3 lakhs annually and the expenditure involved in the present proposals amounts only to Rs 50 000 It was agreed at an informal meeting which the Councillors and myself had with the Comptroller and other Heads of Departments in connection with a programme of expenditure for developing education agirculture industries and commerce

that in order to improve the material condition of the people, it will be necessary to provide for a recurring expenditure of at least 3 lakhs for Technical education The present schemes therefore form a modest beginning

7 As proposed by the Financial Secretary a part of the cost equivalent to the contribution of R 32 000 now charged to Local Funds General on account of the Mysore Industrial and Engineering Schools will be borne by Local Funds General and the rest will be debited to State Funds

8 I am of opinion that it is desirable to issue a single order on the subject to indicate the lines on which we are proceeding The draft Government Order may be approved

Draft for approval

M Visvesvaraya,
19th April 1913

53 × 6
84
1703

Record of Cases submitted for the Orders of His Highness the Maharaja

1226
19 4 13

Subject

Draft of a G O on the subject of improving the Technical and Industrial Education in Mysore

853

Order

Sanctioned

~~KRW~~

21/4/13

Secretary

24 4 13

Sent with a printed copy of the order which was issued to day

By IV

Please send the copy to Press for being printed urgently. The order sh issue in print on Saturday (26th)

24/4/13

24/4/13

9/5/13

24/4/13

9/5/13

G H S 12]

General and Revenue Secretariat | File No ( ) of 191

Serial No	
24	To the I G of Education " Chief Engineer Secy Eco Conference " President Mysore City Municipality " Comptroller " Electrical Engineer Mysore go No 8834-40 / Edn 4626 of 09-29 Dt 1-5-13 passed orders on the im-provement of Industrial and Technical Education in the State

NOTE—Contn shee

G R S 13]

Routine Notes

[To be used only for notes requisitions etc not intended for permanent record]

D. O. Correspondence
& Reminders etc

Routine

Should outside notes be written on small slips they not s u t be cop ed l ps p sted on th s f rm

' ''B —85 000—21-4-09

A/c 22 6 10

19

MYSORE P W DEPARTMENT

C No 355

From

THE CHIEF ENGINEER OF MYSORE
Bangalore

To The Secretary to the Govt
Mysore
General & Revenue Departts
Campelpore

Dated ~~Bangalore~~ Campelpore 19th June 1910

Despatched

Enclosure No

SUBJECT

Informing that the Chief Engineer has no objection to serve on the Committee which Govt propose to appoint for considering the question of the improvement of Industrial Schools in the State

C No 355 D. 9197

MYSORE P W DEPARTMENT,
CENTRAL OFFICE
~~Bangalore,~~ Camp Mysore 19th June 1910

From

M VISVESVARAYA, Esq, M I C E,
Chief Engineer of Mysore,
Bangalore

To

C S Balasundaram Iyer, Esq, B A,
Secretary to Government of Mysore,
General and Revenue Departments

SIR,

Edn 462-09
SL

In reply to your letter No 10946-8/Edn dated the 3rd instant, I have the honour to state that I have no objection to serve on the Committee which Government propose to appoint for considering the question of the improvement of Industrial Schools in the State.

I have the honour to be,
Sir,
Your most obedient servant,

M Visvesvaraya
Chief Engineer of Mysore.

Government High School Bangalore

Dated 23rd June 1910

N-354

D 7211

From

C Krishna Rao Esq

Head Master

Govt High School Bangalore

To

C S Balasundaram Iyer Esq B A

Officiating Secretary to Government

General and Revenue Departments

Sir

GON 462-09

Sl-

With reference to your letter N- 10038-42 dated the 6th May 1910 I have the honour to state that I am prepared to serve on the proposed Committee

I have the honour to be

Sir,

Your most obedient Servant

C Krishna Rao

Head Master

D 9318

190

From

The Executive Engineer,

Water Supply & Stores Division,

To Bangalore

The Secretary to the Government

Of Mysore, General & Revenue

Departments Bangalore

Dated 24th June 1910

Despatched

Received

General No 1266
No

Enclosure No (1)

Sir,

In reply to your No 10946-8/Edn o the 13th instant, I have the honor to in form you that I am willing to serve on the Committee for considering the subjec of improvement of Industrial Schools in the State

A copy of my D O letter dated 9th instant to the address of Mr B Ramaswami Under Secretary is also enclosed for your information

I have the honor to be

Sir

Your most obedient servant,

Executive Engineer,

Water Supply & Stores Divisio

Bangalore

GPB—2000—12-09

D O D ted 9th June 1910

Dear Mr B Rangaswamiah

In reply to your enquiry in your D O No 10038-42/Edn 402-09-1 of the 6th May 1910 whether it ~~will~~ will be convenient for me to accept the membership and serve on the Committee to be appointed for considering the question of Industrial Schools in the State I write to inform you that I accept the offer

Yours Sincerely

Sd V Rangaswamy Iyengar

Office of the Executive Engineer
Water Supply & Stores Division
Dated 8 6 1910

9868

Dear Mr. B R Rasvamiah

In reply to your enquiry in your D O No 10038-42/Edn 462-09-1 of the 6th May 1910 whether it will be convenient for me to accept the membership and serve on the Committee to be appointed for considering the question of Industrial Schools in the state I write to inform you that I shall be ~~I accept the~~ very pleased to be a member of the same

Yours Sincerely
V Nagaraja Iyer

TO

B Ramaswami Esquire
Under Secretary to Government
General Revenue Secretariat
Bangalore

D 8196

Office of the Inspector General of Education
in Mysore, Bangalore, 12 May 1910

Edn 462-09

Dear Sir,

With reference to your letter No 10038-42 / Edn dated 6 h May 1910, I beg to inform you that I shall be glad to serve on the Committee to be appointed for considering measures for the improvement of Industrial Schools in the State

Yours sincerely,

Inspector General

To,

B Ra asra aiya Esq , B A , B L ,
Under Secretar o the Government

No 767

GOVT INDUSTRIAL SCHOOL

Mysore 12th May 1910

Edn 462-09

D 8195

From

The Superintendent
Govt Industrial School
MYSORE

To

The Secretary to the Government of
His Highness the Maharaja of Mysore
General and Revenue Secretariat
Bangalore

SIR

With reference to your no 10,038-42 / Edn 462 09-1 dated the 6th May 1910, I have the honor to state that I shall gladly serve as a member of the Committee to be appointed by the Government for considering the question of the Industrial Schools in the State

I have the honor to be
Sir
Your most obedient Servant
M Subbrahmanian Iyer

IV 10th 12/570 1910 1 0 3 8/3/5

From

The Superintendent,
Govt Industrial School,
MYSORE

To

The Secretary to the
Government of Mysore
Agri & Rev Department
Bangalore

Dated 12th May 1910

Despatched

No 767

Enc No

Subject

Stating that he will serve as a member of the committee to be appointed by the Government

GR 26]

4/5/10

File No 462/09

Serial No 1

Diary No of letter replied to

No 10,038-62
Edn
4 6 5 10

General and Revenue Secretariat
( )
the 190

Date of issue 6 5 10

Signed by

(To be entered)

To
(1) M Visvesvaraya Esq. Chief Engr.
(2) J Weir Esq. I C of Edn.
(3) V Ranganathamiengar Esq. Ex Engr.
(4) C Krishnaiah Esq. Hd Master
(5) S Subbarama Iyer Esq. Supdt. Industrial School

My dear Sir,

It is under the contemplation of Govt to appoint a Committee composed of the marginally noted members for considering the question of Industrial Schools in the State — how they should be conducted according to a comprehensive programme, and what defined courses of training

over

SUBJECT

should be followed &c The Committee will be expected to consider the subject in all its aspects in a comprehensive manner and submit a report to Govt, within a period of 6 months, advising the policy to be pursued and suggesting a definite plan for adoption

I am desired to request you to be so good as to intimate whether it will be convenient for you to accept the membership and serve on the Committee. On the receipt of a reply, formal orders of Govt will ~~issue~~ be issued constituting the Committee and defining the scope of its duties. &c

Yours sincerely
30/4/10
Under Secy

List of enclosures

30/5/10
Copied by Narayanaraoo 5/5
Examined by

MGCPB—30 000—16 9 05

[RS 13]

Routine Notes

[To be used only for notes requisitions etc not intended for permanent record]

No 10038-42

A D o that a reply be sent to the following gentlemen on the 6th May 1910 requesting them to state when will they be able to work on a Committee for considering the state & improvement of Indigenous schools in the State

Messrs (1) M Viswanathayya
(2) J Deen
(3) V Rangaswamy
(4) C Krishna Rao
(5) G Subbaraman Ag

Replies have been received only from Nos (2) & (5) — Reminder to be sent

N B—Should other matters arise which require the attention of the Director of Public Instruction they should be posted on this form

(21)

GRS 13]

Routine Notes

[To be used only for notes, requisitions, etc not intended for permanent record

Gentlemen: Asking them to expedite their reply as to whether the Bureau Reclamation approved

Issue 10/6/61

8/6

B—Should routine notes be written on small slips they should be pasted on blank pasted on the form

G R S 13

Routine Notes

[To be used only for notes requisitions etc not intended for permanent record

This may be kept in the Srs Shelf after entering in the Diary

10/11/10

Key

N B—Should out ne notes b w tten n small l p th not must be copied o sl ps p t d on th s f rm

G I b —85 000—21 4 0J

Urgent

GRS

File No

Serial No

Diary No of letter replied to 8196

No 10946-8

EDn

13 6 10

General and Revenue Secretariat

the 190

Date of issue 13 6 10

Signed by MTGR

(1) M Visweswaraya Esq
Chief Engineer of Mysore

(2) V Rangadwai Iyengar Esq
Executive Engineer
Water Supply & Sewerage

(3) C Krishna Rao Esq
Headmaster Govt
High School Bangalore

Sir

I am directed to invite your attention to ~~the office~~ Dem official Communication No. 10038-42 dated the 6th May 1910 ~~asking~~ inquiring whether you are willing ~~and~~ to work on the committee

over

SUBJECT

MR
12/6

for considering the subject of ~~State~~ improvement of Industrial Schools in the State, and to request the favour of ~~an~~ your early reply thereto

Shane Rice

10/6/10

For Secretary
9/6/10

Lt of enclosures,

Copied by

Examined by 18/6

GPB—10 000—23 5-08

This has been printed (proofs being corrected by L.A. Chetkovich)

F I L E C I S S U E S

N o t e

dated 16 April 1912

on the scheme of techrical education in Mysore

as recommended by the Committee arpointed in

Government Order No 3585-[illegible]--Fdn 462-09--2

dated 28th ~~October~~ September 1910

30 Oct 1912

------oooOooo------

Serial No

If any funds are available I am prepared to advise Government that additional allotments should be sanctioned for the spread and development of education--general and technical

2 Both on general and financial grounds, however I cannot agree with the proposals of the Industrial Schools Committee in their entirety The extent to which their proposals seem to me to be acceptable is indicated below For this purpose, I take the several items mentioned in appendix III of the Committee's report and discuss them one by one

3 The first proposal of the Committee is to establish a College of Technology in Bangalore which will involve to begin with a capital outlay of three lakhs of rupees and an annual recurring expenditure of Rs 75 000 The necessity and scope of this institution have been discussed by the Committee in section 4 of their report pages 5 to 10 I do not question for a moment that the establishment of such an institution will, to a certain extent, prove useful But, in my humble opinion the utility of a Technological College in Bangalore of the kind advocated by the Committee will not be commensurate with the large expenditure required The question for us is not so much whether a high grade Technological College will be any good but whether

Serial No

whether the objects intended to be attained by such an institution cannot be attained more economically by other means

4 The Technological College is intended to have three sections viz (1) Higher Technical Education, the subjects of which as given in para 20 of the Committee s report, consists of various branches of Engineering (2) Special Industrial Education, the branches of which are enumerated in section 21 and (3) Higher Commercial training the subjects to be taught in which are given in para 22 I think that the instruction and training which one may get in section (1) of the Technological College referred to above is not very different from the education imparted in any of the existing first class Engineering Colleges of India, e g Poona, Sibpur Purki etc , It does not appear that Mysoreans experience any great difficulty in gaining admission say to the Engineering College Poona and with the help of the system of Government scholarships tenable in Engineering Colleges in British India the requirements of education in high class Engineering line in the State may be held to be met

It may be mentioned in this connection that for vacancies in the Engineer & Upper subordinate services of the Mysore Govt we are flooded with applications from candidates possessing high educational qualifications of the kind required

Then as regards branch (2) of the Technological College for imparting a special industrial education will not a course of study in the

Indian

Serial No

Indian Institute of Science at Bangalore supplemented by a period of practical work in a large factory either in India or in a foreign country be equally or more effective? As regards branch (3) of the proposed College of Technology viz Higher Commercial Training some of the subjects included under it, for example Economics, Political Economy Commercial Arithmetic etc are taught in ordinary educational institutions For others classes may be opened in existing educational institutions or the Commercial School at Bangalore (a private institution having for its object the commercial training of young men) may be developed with some Government help and under Government supervision

5 It will thus be seen that the proposed College of Technology involving a very large initial outlay and a considerable recurring expenditure will not serve any purpose which cannot be attained by means already available to students in Mysore who desire to obtain higher ~~commercial~~ technological education The object of the proposed College of Technology in Bangalore is said to be to train students who have already received a fair amount of general education so as to qualify them for taking a leading part in the management of industries and commerce in the country In this connection it may

Serial No

may b pointed out that the development of industries and commerce and the training of people who are to be employed in the management of industries and commerce should proceed side by side on parallel lines If the work of training students goes ahead of the development of industry the result will be that a number of men with a theoretical technological knowledge of a high order will come into existence and there will be no field in which they can be properly employed Under such circumstances they will have to be employed otherwise than in industries for which they received a training and the money employed in giving them technical education will have to be properly regarded as wasted

6 The second proposal of the Committee is to establish a technical School at Mysore under the name of Chamarajendra Technical Institute which will be formed by the amalgamation of the existing Engineering and Industrial Schools in that City With this proposal I am in full sympathy I quite agree that the establishment of such a technical school will lead to great good

7 I think however it will be sufficient if the proposed Technical Institute has two sections instead of three The sections proposed are -- (1) Elementary Engineering (2) Technical (3) Industries

Serial No

(3) Industries and Crafts It will be seen from the details of the Technical section given in para 36 of the Committee s report that, besides such general subjects as mathematics Elementary Physics and Elementary Chemistry only one special subject is proposed to be taught There are four of these special subjects mentioned Of these (a) achine work and (b) Weaving and dyeing also occur in the list of the industries and crafts section given in para 38 Photography includir process-work is not mentioned in para 38 but it may as well be included there The 4th special subject consists of commercial subjects such as book-keeping business correspondence etc. For these as I have already stated special classes attached to existing educational institutions will be sufficient It will thus be seen that by including photography in the list of industries and crafts in para 38 the whole technical section of the proposed Chamarajendra Institute may be dispensed with

8 According to the above view the Chamarajendra Technical Institute at Mysore will consist of two sections (1) Elementary Engineering and (2) Industries and Crafts The rules ~~proposed~~ for the Engineering section may be as proposed by the Committee For the Industries and Crafts section

Serial No

which may also be called the General Technical Section the standard of educational qualification for admission should be regulated according to the nature of industry e g for printing engraving land-surveying Electrical Work Typography and Photography the passing of the Matriculation Examination must be insisted on For admission to the other classes those who have passed the Lower Secondary Examination may be given preference if a sufficient number of candidates who have passed the Lower Secondary Examination are not forthcoming then those with lower educational qualifications may be admitted provided they have a reasonable chance of passing the Lower Secondary Examination during the technical course Students from each class of the Technical Institute should be allowed to go up for the Lower Secondary Examination and no one who fails to pass the Lower Secondary Examination should be given the certificate of a qualified artisan referred to in para 44 of the Committee s report This is necessary in order that the men turned out by the Technical Institute may be distinguished from the ordinary type of workmen by possessing a fair amount of general education

9 Whenever possible students trained at

Serial No

at the Technical Institute will finish their course with practical training in a factory which will be arranged by Government e g in weaving and dyeing the practical training may be given at the Mills of the Mysore Spinning and Manufacturing Co or in the Tata Experimental Silk Farm for machine work fitter s work and foundry work it may be in the Public Works Workshop for boot-making and leather manufacture in the Mysore Tannery Company s Factory and for printing and Typography at the Government Press

10 Classes for instruction in drawing and in English Vernacular and other subjects up to the Lower Secondary standard should be maintained in the Technical Institute All students who have not already passed the Lower Secondary or a higher examination ~~who have passed the Lo~~ should pass the Lower Secondary examination before they leave the Institute on finishing their technical course

11 As regards the scale of expenditure on account of the Technical Institute given in para 47 of the Committee s report I would offer the following remarks -- If the technical section is omitted four headmasters at a cost of Rs 700/- per month will not be necessary The Institute will consist of a Superintendent who will exercise general supervision over the Engineering section

Serial No

section and be in direct touch with the various technical branches each under its own staff of lecturer and instructors To help the Superintendent one Assistant Superintendent on Rs 200/- a month may be given Then again it is not clear why such a large number of scholarships should be given The amount to be given in scholarship may be fixed at Rs 500/- a month The provision made for the menial establishment viz Rs 2 400/- a year also appears susceptible of reduction by Rs 1 000/- A reduction in the total expenditure of 6 000+ 6 000 + 1 000 or 13 000/- thus appears possible The net excess ~~of the~~ expenditure which is worked out in the Committee's report as Rs 25 000 per annum is thus reduced to Rs 12 000

The Committee also propose an initial outlay of Rs 25 000 for workshop materials and Rs 25 000 for equipment with machines etc in all Rs 50 000 This may perhaps remain as it is desirable to fit up the institution in a satisfactory manner It must be remembered that, besides this Rs 50 000 to be spent in equipment on the materials there will be an expenditure of Rs 2½ lakhs on the building

12 As far as the Committee's recommendation regarding the Chamarajendra Technical

Note—Cont sheet

Institute

Serial No

Institute is concerned I agree therefore to an initial outlay of Rs 50 000 and a recurring additional expenditure of Rs 12 000 per annum

13 The 3rd heading in appendix III is 'the improvement of existing Industrial Schools' for which a capital outlay of Rs 30 000 and an annual recurring expenditure of Rs 25 000 are contemplated It will be seen from para 49 of the Committee s report that they recommend the taking over by Government of the Industrial Schools at Hassan and Melkote As private organisation and management as regards educational institutions is to be encouraged rather than discouraged the object of this recommendation is not clear The Committee proposes that there will be nine mofussil Government Industrial Schools in the Province as enumerated in para 49 From the list of subjects to be taught in these 9 schools as given in that paragraph it appears that most of these schools except Chennapatna will be weaving and Carpentry Schools with the addition of smithy or cane work It is not clear why besides Instructors teachers and clerks whole-timed Superintendents on high pay should be appointed to these schools In any case a material reduction in the cost of 9 Superintendents as given in para 54 of the Committee's report seems possible There may be

two

Serial No

outlay to Rs 20 000

14 Under the head 'Improvement of existing Industrial Schools' therefore the Committee's figures are Rs 30 000 for initial outlay and Rs 25 000 recurring expenditure my ~~giressxxrs~~ figures are Rs 20 000 initial outlay and Rs 12 000 recurring expenditure In conrection with these mofussil Industrial Schools one more point may be mentioned The demand for the production of any handicraft is not unlimited For all practical purposes in India the production of food-stuffs i e agriculture and weaving may be regarded as industries the outturn of which will have no difficulty in finding a market In all other branches there is the possibility of overcrowding and overproduction I find that in every one of the nine Industrial Schools Carpentry is one of the industries to be taught From the Chamarajendra Technical Institute about a hundred well-trained certified artisans of all classes may be expected to be turned out every year and a considerable number of these will belong to carpentry and allied crafts It is a question if under the circumstances it is necessary to retain carpentry in all the Industrial Schools Even weaving is not proposed to be taught in all I would suggest for consideration whether all these

Industrial

GPB—50 000—18 5 08

Serial No

If this is done the appointment of highly paid superintendents will be unnecessary and the additional recurring expenditure under this head further reduced from Rs 12000 to Rs 6000

Industrial Schools could not be constituted as mainly Weaving Schools, an additional industry such as Carpentry or smithy or cane work being also taught The case of the Chennapatna School which has already developed on other lines is different and may be treated as special

15 The 4th item in appendix III of the Committee's report is 'Subsidies and Grants-in-aid to Schools of various classes and for this the capital expenditure of one lakh of rupees and an annual recurring expenditure of Rs 93 000 is proposed In summing up their recommendations in paragraph 113 of their report the Committee observe Since any permanent development of industrial education in the districts will depend on the extent to which voluntary effort on the part of the people is enlisted every application for an institution or class should be accompanied by an offer to meet one-half or other percentage of the entire cost of such institution or class as Government may fix in each case This is a very healthy and acceptable rule as it ensures that any additional outlay on the part of Government is really wanted and will actually prove useful to the population s far as funds are available I have no objection to the sanction of subsidies and grants-in-aid on these lines for the spread of general as well as technical

Serial No

technical education But the figures proposed by the Committee assume that the people in the towns and villages of Mysore are ready to come forward with an offer to incur the capital outlay of one lakh of rupees and an annual recurring expenditure of Rs 93 000 I do not know what grounds there are for believing that this is the case and to me the assumption seems too good to be true For all practical purposes I think if Government be prepared for a capital outlay of Rs 30 000 and a recurring annual expenditure of 10 000 rupees all the requirements under this head for some years to come will be met

16 The next item in appendix III is Scholarships and Foreign Training for which an annual recurring expenditure of Rs 57 000 is estimated The Committee think that the provision already made by Government for scholarships given in India outside the State is adequate and that the scholarships are fairly well-distributed I may here mention that in addition to the scholarships mentioned in para 93 of the Committee s report the following other scholarships are also given by Govt & local funds

Scholarships for Probationary Foresters in the Forest College Dehra Dun, scholarships for Hospital Assistants and Sanitary Inspectors at Rayapuram, scholarships at the Veterinary colleges Bombay & Madras

Note—Continue sheet.

Serial No

17 As regards scholarships tenable outside India the Committee recommend that in addition to the Damora Dass scholarships two scholarships of £300 each be granted annually from State Funds The Committee do not state for how many years the scholarships are to be tenable But this is a very essential element in the calculation I venture to think that in addition to the Damora Dass scholarships the greater number of which should be given to students studying industrial subjects two scholarships of £200 per annum and tenable for two years each may be given from State Funds I do not think that it is necessary to have two local officers constantly on deputation in foreign countries at a cost of Rs 30 000 per annum Against the Committee s figure of Rs 57 000 under this head, my figure is thus reduced to Rs 12 000 per annum Moreover these

18 The 6th and last item in appendix III of the Committee's report is Direction and Control In my humble opinion all that is necessary in this direction is the appointment of an Inspector of Industrial Schools who should act as a Deputy to the Inspector-General of Education in matters connected with Industrial education If the Inspector-General of Education is relieved of the control of the two Colleges the Principals of these institutions being allowed

usual scholarships need be given for study of actual subjects, however important interesting as a matter of ordinary routine but should be did only when fort feel the by of having men trained the definite object of the organization or development of some other industries within

Serial No

allowed to correspond directly with Government he will find sufficient time to devote to the important subject of industrial education and with the help of a Deputy or Assistant as stated above he should be able to push on and develop this branch of education within the State Additional expenditure on this account may be placed at Rs 4 000 per annum against the Committee figure of Rs 25 000 To bring out clearly the suggestions made above I append hereto a statement in the form of appendix III of the Committee's report with additional columns shewing my suggestions on the subject side by side with the Committee s ~~xxxxxx~~ recommendation (App I)

19 It will be seen that though in most cases I have not been able on financial and other grounds to go as far as the Committee, the result of giving full effect to my suggestions will be an additional capital outlay of one lakh and a recurring expenditure of Rs 50 000 per annum This ~~xx~~ in my humble opinion would meet our present requirements and would constitute a great move in advance and it may not prove beyond the financial capacity of the State

20 The question of founding a high-class Technological College Mysore and that of an increase in the number of scholarships tenable for technical training outside India were discussed in my Quin-

G R S 12]
General and Revenue Secretariat

File No of 19

Serial No

quinquennial Financial Review of 1910 and the opinion recorded in this note on those points is in substantial agreement with the views expressed therein (Vide paras 104 to 109 of quinquennial Financial Review dated 4th October 1910)

21 I append copies of two newspaper articles which will be interesting in this connection

J S Chakravarti
1 4 1912

NOT —C ntn sheet

GPB—50 000— 12 8 10

Abstract Estimate of cost of proposed Developments

List of Institutions	Committee's report		Financial Secretary's suggestio	
	Capital Cost	Annual recurring expenditure	Capital Cost	Annual recurring expenditure
	Rs	Rs	Rs	Rs
1 College of Technology in Bangalore	3,00,000/-	75,000/-	nil	nil
2 Chamarajendra Technical Institute in Mysore (additional expenditure vidé para 48 of report)	50,000/-	25,000/-	50,000/-	12 000/-
3 Improvement of existing Industrial Schools (additional expenditure vide para 54 of report)	30 000/-	25,000/-	20,000/-	12 000/-
4 Subsidies and grants-in-aid of--				
(1) Technical Schools, classes or lectures	0			
(2) APT, Trade do	0			
(3) Industrial and Craft Schools continuation classes or lectures	0			
(4) Commercial classes or lectures	0	1,00,000/- 93,000/-	30,000/-	10 000/-
(5) Girls' do	0			
5 Scholarships and foreign training (vide para 100 of report)		57,000/-		12,000/-
6 Direction and Control		25 000/-		4,000/-
	5,00,000	3,00 000	1,00 000/-	50,000/-
	4,50,000/			

Serial No

The Craze for Technical Education

(By Harold Cox)

Since I have been in India nothing has surprised me so much as the extravagant importance attached by leaders of Indian opinion to Technical Education. There seems to be a universal belief that technical education is a kind of fetish which has only to be set up and worshipped and straightway flourishing industries will spring into being all over India. Even calm business thinkers seem to regard technical education as the first essential to the industrial development of the country. That this sudden craze should have taken possession of the Indian minds is all the more surprising to me because I can remember that when I was in India before proposals to substitute technical for literary education were very ~~popularly~~ scouted by Indian opinion. Some European advisers who somewhat thoughtlessly said "Learn trades and make fortunes" -- Indian gentlemen replied that there was an immediate market at the Bar and in Government service for young men who had received a literary education but there was no such market visible for boys who had received an industrial training. Twenty years have passed but the same answer might still be made. It is true that the number of competitors

for

Serial No.

for Government service and the Bar is greater than before but the prizes are still there in a goodly number for the best men to win where is as far as I have been able to learn in the case of technical education there are practically no prizes at all People say that until India possesses an industrially trained population she cannot possess industries That is a question which I will discuss presently but it only remotely concerns the parent who is considering what are the openings for his son The sensible Indian knows that a boy who has had a literary education will have a chance of obtaining a really good position as a barrister or as a civil servant and that even if he completely misses these chances he will still be able to find some employment as a clerk or a teacher But suppose the boy has been sent to a technological college and learnt the technique of some particular industry what is he to do with his knowledge? Who is going to give him employment? It is no answer to these questions to say that technical education is a prelude to the industrial development of the country The boy wants employment he does not want preludes to industrial development

Let me relate an anecdote Some years ago the Government of India which has also been bitte

Serial No

with this craze for technical education sent to England an Indian boy to be taught the art of dyeing according to the latest scientific methods in a technical college in Yorkshire He was a very bright boy he worked hard and gave complete satisfaction to his teachers Just as he had finished his studies a big English firm asked the the principal of the college to recommend them a scientific expert in dyeing Without any hesitation the principal recommended this young Indian lad and the firm after making further enquiries engaged him at a salary of £200 to £300 a year That is not a very princely salary after ~~many years~~ several years of hard work but the point of the story is that ~~the~~ the employment of this young man in England by an English firm is in no way a prelude to the industrial development of India and is a very unsatisfactory return for the money which the Indian taxpayers have lavished on the boy s education

If any one asks why this Indian boy finds employment in England and not in India the answer is very simple In England industrial development has reached a high level and therefore there is a demand for scientifically trained experts in India industrial undertakings of the modern type are extremely rare and must remain rare until more capital

Serial No

capital and more enterprise are forthcoming Industries are not started because a number of class-room trained experts are clamouring for employment Before an industry can be started somebody must have the enterprise and energy to organize its beginnings and that somebody must either have capital of his own or else must be able to persuade other people to supply the capital required These are the primary essentials to the establishment of any new industry and if they can be secured the remaining difficulties can be faced with some hope of success But unless the spirit of enterprise exists and capital is forthcoming nothing can be done In India there is very little enterprise and if capital exists its owners decline to invest it in Indian enterprises Therefore for the Government to spend large sums on technical education would be not only a waste of the taxpayers money but a cruel wrong to the boys who had been deluded into acquiring knowledge for which there was no market The matter can easily be put to a test Let the Government before launching out on any big schemes of technical education ascertain how many firms there are in the whole of India who want an expert chemist or an expert dyer or any other kind of expert that it is proposed to be turned out from the technical schools

Serial No

schools Let the government further enquire what salaries these firms propose to pay and to what extent they are willing to employ Indians in place of Europeans When this information has been collected and published, I suspect that there will be very little further demand for technical education on a wholesale scale

These considerations of course in no way affect the altogether different problem of providing tuition for boys who look for employment in the subordinate branches of industry and commerce There is certain to be in the larger towns a steady demand year in and year out for skilled mechanics and for clerks who can write shorthand and use a typewriter and who have some knowledge of the elements of accountancy Doubtless the education authorities already have given attention to these points, but, when a native gentleman talks enthusiastically of the blessings of technical education he is evidently thinking of something very different from the training of clerks and mechanics He has in his mind the conception that sons of gentlemen can be taught in school class-rooms how to become great captains of industry That is the wildest delusion Even in Europe the school-trained industrial expert can as a rule only look forward to a very modest salary as a paid servant in some big firm I am told

Serial No

that in Germany first class chemists are to be had for little over £100 a year In India there is not even this outlet for the talents of the industrial expert and a boy who had devoted precious years of his early life to mastering the technical details and scientific principles of some particular trade would find when he left school that from the point of view of earning money all his time has been wasted

If it is asked--How then is India to develop industrially the answer is She must begin by acquiring capital and enterprise and if these are not forthcoming from her own people she must borrow them from other countries In the first half of the nineteenth century Germany had to borrow capital and enterprise and technical skill from England and she is now able to do without her teacher The same opportunity lies open to India but her progress will necessarily be slower than that of Germany because most of her people are still on a lower intellectual plane than the Germans occupied two generations ago Meanwhile it is worthy of consideration whether as far as educational work is concerned it would not be wiser to direct attention to agriculture rather than to manufactures Agriculture is and always will be the principal industry of the people of India

already

-Contn sheet

Serial No

lready it is in some of its branches a more profitable occupation than many manufacturing industries and there is a great probability of a further relative advance On the other hand the growing population of the world and the general rise in the standard of living are forcing up the prices of foodstuffs On the other hand by the application of sciences to agriculture farmers are now able to secure a much more profitable return for their labour It may well be that the future lies with the farmer rather than with the artisan But whatever the future may bring forth at present it is beyond doubt that there is in India a greater opportunity for applying the teachings of science to agriculture than for manufactures For in India it is only possible to establish manufactures on any extensive scale--and that very slowly---by borrowing capital and enterprise from Europe Whereas agriculture already exists There are millions of cultivators in India who with the aid of technical advice would be able to increase the quantity or to improve the quality of their produce thus adding enormously to the wealth of India and to the well-being of her people Here is unlimited scope for what may be called scientific missionary enterprise and here is a practical opening for

young

Serial No

young men who will make it their profession to go about the country--as is already being done in Europe--carrying advice to the farmers in their own fields (THE STATESMAN MONDAY JULY 4 1912)

2 Technical education

The statement made by Mr Sprott at the prize-giving of the Victoria Jubilee Technical Institute discloses rather an unusual state of affairs There has been a loud cry in India of recent years for the development of technical training and in response to that demand new institutions are being started The result that the very life of the Institute in Bombay, a child of India with a record of twenty-five years to its credit is threatened by the competition these new schools. In operation this competition could do no harm but in this case there seems no justification for it The indiscriminate demand for improved facilities for technical education is by no means satisfied with at the regard to those facilities which already exist The Institute in Bombay has in the past drawn students from all parts of India and there is no reason why with its good equipment and high standard of teaching

G R S 12]

General and Revenue Secretariat

File No of 190

Serial No	
	[illegible]

NOTE—Continue on next sheet

GPB—55000—7 4 70

Government of Madras.

EDUCATIONAL DEPARTMENT

Read	1912.	*Enclosures*
Regd		*Spare copies*

G O No 776, 24th August 1912

Industrial and Technical Education

Accepting generally the recommendations made by the committee appointed to consider the question of improving — in the north of Madras and requesting the Superintendent of Industrial Education to formulate and submit definite proposals for the establishment of State apprenticeships and the opening of a technical school on the lines advised by the committee

No 776, Educational, 23rd August 1912

GOVERNMENT OF MADRAS

EDUCATIONAL DEPARTMENT

Read—the following papers —

I

G O No 28, Educational, dated 16th January 1912

Abstract —Appointing a committee to consider and report upon the improvement of industrial and technical education in the north of Madras

---

II

Letter—from A Chatterton, Esq , Officer in charge of Pumping and Boring Opertions
To—the Secretary to Government Educational Department (through the Director of Public Instruction)
Dated—the 1st March 1912
No —11 G

In reference to G O No 28, Educational, dated 16th January 1912, I have the honour to submit the report of the committee appointed to consider the question of improving Industrial and Technical education in the north of Madras Appended to the report is a brief resumē of the discussions at the four meetings held by the committee also a note submitted by Mr Bamford regarding the proposed courses of instruction to be started at Perambur by the Madras and Southern Mahratta Railway Company

2 In the seven resolutions the committee formulated definite replies to the points submitted by Government in their No 2558-1, dated 11th November 1911 I should add that I invited Mr K T B Tressler, the Acting Superintendent of Industrial Education, to be present at meetings, and I am indebted to him for valuable assistance rendered in the capacity of Secretary to the Committee

3 If Government decide to take any action upon the report of the committee I presume they will call upon the Acting Superintendent of Industrial Education to formulate a definite scheme and in the following remarks I propose to only deal with certain general considerations It will be seen from the resolutions that the committee unanimously approve of the proposal to establish a system of State apprenticeship among the Engineering shops in the north of Madras and from the fact that they recommend that the instruction should be given in English it is evident that they contemplate training a class of men considerably superior to the ordinary artizans and suited to ultimately become maistries, contractors, charge men and foremen It is only very rarely that an ordinary artizan has received sufficient general education to enable him to take advantage of any courses of instruction to which the term technical may be fitly applied Apart from the railway workshops at Perambur which attract a very large Anglo Indian element and a superior type

of Indian artizan, a fairly large percentage of whom have received a tolerably good general education, the other workshops in Madras have few men or boys at the present time for whom it will be worth while to propose the establishment of technical clas es The recommendations of the committee therefore assume that the scheme for the establishment of State apprentices will be given effect to If that scheme is not carried out I am personally of opinion that it will be scarcely worth while to attempt to establish a technical school in the north of Madras The railway company will provide for its own needs at Perambur and will provide also for the fifty State apprentices if ultimately so many are sent to their workshops

4 Although the natural resources of the Madras Presidency preclude the possibility of industrial development on a large scale, yet there is evidence that in the future there will be a very considerable demand for the services of a superior class of mechanic to supervise the working of a large amount of labour saving machinery which will be employed to prepare agricultural products for the market A recent investigation shows that there are at present about 150 rice mills 400 irrigation plants and 100 cotton presses and gins in operation in this Presidency and that the majority of these have been established during the last few years The working expenses are in many cases much higher than they should be owing to the careless way in which the machinery is run It will take at least five years to train a mechanic fit to look after such machinery and in five years time we may safely calculate on at least double the number of machines and plants now in existence Rice hulling machinery so far has only come into general use in the Kistna and Godavari deltas The people in Tanjore are now taking to it and in time its use will spread to other irrigated tracts Cotton ginning is possibly in a more developed state but there is still room for a considerable expansion in those districts where Cambodia cotton is being grown whilst as regards irrigation by pumping probably not 1 per cent of the possible number of pumping plants has yet been installed In other directions the use of machinery is likely to extend There is therefore no reason to apprehend that the appointment of 100 or 150 State apprentices will lead to the turning out of more foremen mechanics than the Presidency can readily absorb Allowing 25 per cent for wastage which, I hope, will be sufficient about 40 apprenticeships per annum might be offered My idea is that boys should be brought to Madras from all parts of the country to be trained at these mechanical engineering works and at present, till the scheme is put in operation I am quite unable to say whether any special inducements will have to be offered to get people to put their sons to such a course of training Obviously, only the minimum amount of inducement necessary should be offered The railway company pay to each of the apprentices a minimum wage of As 3 a day, but it will be advantageous, if possible, to attract a better class of apprentices than the average of those now at Perambur and the minimum wage I think, might be fixed at As 4 a day rising to As 8 a day by annual increments of one anna This would mean that each boy would be to some extent dependent on his relatives, but that from the outset he will be able to pay from one third to one half of his expenses

5 The question of training in the workshop will have to be left largely to the managers of each workshop as it is perfectly certain that they will not allow any interference from outsider , though they may be quite prepared to accept suggestions if they consider them reasonable It seems to me necessary that it should be made quite clear that in all but a few exceptional cases the apprentices are to receive an all round mechanical training and not be confined to one shop for the whole period of five years It is true that good moulders fitters and smiths are badly needed, but there is an even greater demand for all round mechanics who can take charge of running machinery but who are not specialists in any part of the shop work

6 The recommendations of the committee in regard to the technical school are sufficiently clear and I would suggest that if and as soon as Government have decided to carry out the scheme the first step should be the appointment of a committee to manage it as proposed in resolution 6 I am distinctly of opinion that at the outset the school should be under the superintendence of a European Officer who need not necessarily take any part in the actual teaching work If it were practicable to acquire the premises and buildings lately occupied by the Government

Harness Factory at Perambur it would, I think, be a convenient site for the proposed leather trade school and for these technical classes It will not add greatly to the duties of the superintendent of the leather trade school to look after these classes provided suitable technical assistants are given for the teaching work During the first two or three years the work will necessarily be of a very elementary character, but I should expect considerable developments in course of time and the addition of classes not solely intended for apprentices from the mechanical engineering shops The immediate question of importance is the procuring of a sufficient number of instructors to carry out a programme of work which will not differ very greatly from that proposed for the railway school at Perambur Although each apprentice will only spend three afternoons a week in the school it will not be practicable to have all the apprentices there at one time and it may be assumed that the classes will be held every afternoon throughout the week No instructor will probably find it necessary to attend more than three times a week and I imagine that if a fairly liberal remuneration is offered to the teachers there will be no difficulty in getting the right class of men

---

Enclosures

(1)

Letter—from the Committee for improving the Industrial and Technical Education in the north of Madras
To—the Secretary to Government, Educational department
Dated—the 26th February 1912

We, the members of the committee constituted in G O No 28 Educational dated 16th January 1912 to discuss the question of providing further facilities for Industrial Education in the north of Madras have the honour to submit the following report

2 The committee held four meetings, on the 29th January, 2nd 6th and 20th February 1912 respectively On the points which the committee have been invited to discuss the resolutions appearing at the end of the present report were arrived at

3 The committee recognise that during recent years a considerable development in mechanical engineering has taken place in this Presidency and that this movement is creating a demand for trained labour which cannot at present be met Apart from the railway companies which occupy a special position in this matter all other employers of labour, be they firms or private individuals requiring men to take charge of the numerous small industrial and irrigational plants that are springing up all over the Presidency are experiencing the greatest difficulty in finding suitable labour From the point of view of the employer, the man trained in the methods of the country possesses neither the intelligence nor the knowledge of workshop practice that are requisite In the factories and workshops of Madras there is a demand for moulders pattern makers fitters turners smiths and general machine men and the supply is at present inadequate In the districts there is equally a demand for engine drivers and foremen erectors and for men capable of doing miscellaneous repair and maintenance work For the latter class it is observed that education somewhat on the lines favoured by the committee is now being provided at the Chengalvaroya Naicker s Technical Institute, Madras, and that although the facilities for acquiring a practical knowledge in engineering in this institute are very limited and the course of training in many ways imperfect, yet the apprentices there trained appear to have no difficulty in securing remunerative employment at the end of their course

4 But this is merely an isolated instance and since the committee do not regard industrial schools as competent to train workmen, they consider that regular provision should be made by the Directors and Managers of existing factories for the education of a large number of engineering artizans the bulk of whom should specialise in one or other of the trades already enumerated and they for this reason welcome the proposal of Government to establish State apprenticeships They agree that the five year training contemplated under the State apprenticeship scheme represents a suitable period but are of opinion that to benefit by the courses to be provided apprentices must possess a sufficient previous literary education to enable them to receive instruction in English

5 As the representatives of the Madras and Southern Mahratta Railway Company have explained that the company contemplate making provision for the education of their own apprentices separately and as the majority of the employees of other companies in Madras work in the neighbourhood of Washermanpet, the committee, after carefully comparing the relative merits of different situations, have come to the conclusion that the most convenient site for a school would be one as near as possible to the Basin Bridge station

6 The committee have fully considered the question of curriculum school hours and staff On the first point they are of opinion that it is impracticable at present to lay down a definite programme as the character of the teaching must be largely decided by the ability of the apprentices which has still to be ascertained Roughly speaking however they consider that about one third of the time should be allotted to arithmetic mensuration elementary mathematics and mechanism one third to mechanical drawing The committee do not think that evening classes would prove successful as it is hardly to be expected that apprentices after a full day at the works will exhibit that interest in the teaching which is essential to success They also hold that early morning classes would probably cause too great a dislocation of the ordinary works routine and they conclude therefore that the classes should be held every afternoon each apprentice receiving instruction for three afternoons a week

7 As regards taff the committee find that none of the firms in Madras pos ess a sufficiently large European staff to make it possible for them to spare men for industrial purposes It is considered therefore that the staff will have to be provided by Government

8 On the probable number of students the committee is not in a position to pronounce a definite opinion Whilst of the view that the proposed school should be open to all they do not think that any ne should be admitted who is not at the time going through a proper course of practical training or is not practically engaged in the exercise of his trade It appears to the committee therefore that at any rate to begin with the attendance will probably be limited to State apprentices Further in view of the separate facilities to be provided by the Madras and Southern Mahratta Railway Company they do not think that the attendance will amount to much more than 50

9 The committee consider that the interests of the school would be best served if it were placed under the management of a representative committee They accordingly suggest that the committee should be composed of one Railway officer two representatives of the firms in Madras one officer of the Educational department and the General Superintendent of the Public Works Workshops They are of opinion that the committee of management should determine the character of the teaching to be given and all other practical details connected with the working of the school

10 If the railway company establish a school of their own they will naturally not be prepared to contribute towards the support of the institution but the remaining companies represented by the committee are inclined on principle to furnish assistance They would however point out that in default of definite proposals they are not in a position to make any promises and would submit that in any case the amount of support which it may be possible for them to give will necessarily be small compared with the total cost of carrying on the institution work

11 The committee agree with the principle of levying fees and consider that small contributions should be taken from each apprentice attending the school The exact amount to be thus charged they leave to the Managing Committee to settle but consider a sum of about As 8 a month to be a reasonable fee

12 In conclusion the committee desire to express their general approval of the proposals submitted for their consideration by Government which they regard as calculated to meet a real and definite want They are convinced that industrial education can only be given in commercial workshops where the elements of cost and time which are dominant factors in practical work receive adequate recognition

The resolutions arrived at are as follows —

(1) That it is desirable to establish a system of State apprentices among the engineering shops in the north of Madras

(2) That it is necessary to make some provision for technical training in a school outside the workshops

(3) That instruction be given in the school to each boy on three days a week in the afternoons

(4) That the instruction be given in English and that the boys should possess such educational qualifications as to enable them to take advantage of it

(5) That the school be established as near Basin Bridge station as a convenient site can be found

(6) That the management of the institution be vested in a committee to be nominated by Government and to be representative of the various interests concerned

(7) That the committee recommend that a fee should be charged to all apprentices

The first meeting of the Committee, dated the 29th January 1912

Present

A Chatterton, Esq (*President*)
A Williamson Esq
R G Bamford, Esq
J W Anderson, Esq
A C Tweedy Esq
H B Peirce Esq
A Carnall Esq
Haridas Visonji Esq
K T B Tressler Esq (*Secretary*)

Mr Chatterton in opening the meeting explained briefly the present position of technical education in Madras and the reasons why the committee had been called There was, he said a considerable development of minor mechanical engineering going on in this Presidency Numerous rural factories such as sugar mills, oil mills ginning factories, etc , were springing into being and it was extremely desirable that such industries should be encouraged There were also signs of a large impending development in the direction of irrigation by pumping In all work of this kind there was a demand for trained mechanics, which could not under existing conditions be met It was accordingly essential that steps should be taken to provide extended facilities for the training of the class of men required Having come to this conclusion the question of ways and means arose to provide the necessary educational facilities, should a special school be established or should arrangements be made with private works for a system of State apprenticeships

The members then entered upon a general discussion on the subject of training Regarding the necessity for extended educational facilities there was a general unanimity of opinion, but Mr Peirce pointed out that in his experience a necessary preliminary to any scheme of technical education would appear to be the establishment of some sort of control over the apprentices to be trained At present he found that apprentices, in most instances, just waited for the first chance of outside employment to run away and that only a small minority ever actually finished their training The opinion was generally endorsed by the majority of the members considering that the only way to ensure complete training was by introducing something of the nature of indentures and by restricting employment to men who could adduce evidence of having served their complete time in the ordinary way

In regard to the Madras and Southern Mahratta Railway Company, both representatives were of opinion that the company experienced no difficulty in getting labour for its own requirements

As regards technical instruction, Mr Bamford read a note explaining the efforts made at Perambur to establish extension classes These efforts proved abortive owing to lack of support on the part of the apprentices A second attempt was however now to be made Previously classes had been conducted in the evenings and Mr Bamford was of opinion that this was the reason why they had failed His experience showed that though apprentices might attend lectures in lieu of workshop practice they could certainly not be persuaded to do anything of the nature of unpaid overtime and it was accordingly now proposed to hold the classes during working hours

Mr Chatterton explained that one of the principal difficulties connected with technical schools was that of supervision and staff There was now a proposal on foot to establish a tanning school at Perambur and if a technical institute were constructed on an adjacent site the principal of the tanning school could exercise supervision over the technical school also As regards staff he had hopes that the railway company would consent to selected members of their staff giving lectures Mr Bamford said that the railway company would no doubt give all possible assistance to a school such as that contemplated but pointed out that as they had a scheme of their own in view he could not at present tell how far the railway company could co operate in the present proposals

Mr Chatterton said that the attitude of the railway company was one of the dominating factors in the subject under discussion and that until their views have been definitely ascertained it would be profitless to discuss details It would clearly be impracticable to run two technical schools at Perambur and if the company decided to continue their own scheme the question of another site would arise This question was a most important one Attempts have been made years back to provide workmen s courses at Chepauk but the artizans found the distance to Chepauk much too great to cover daily and the attendance at the lectures was accordingly confined to the office clerks

Taking all things into account the meeting was of opinion that the best central site would be somewhere in the neighbourhood of the Basin Bridge Railway station Such a site as Mr Bamford explained would probably be just as convenient to the railway employees at Perambur since a special train service could be arranged

It was accordingly generally agreed that further educational facilities of a technical character were much to be desired but that any courses that might be arranged for should be held during ordinary workin, hours and not in the evening That further possible sites for a school round Basin Bridge might be examined, but that nothing definite could be decided pending a definite statement by the railway company of their intentions

The meeting adjourned at 9 30 A M till Friday the 2nd February 1912

Alfred Chatterton

(iii)

The second meeting of the Committee, dated the 2nd February 1912

Present

A Chatterton Esq (*President*)	H E Harris Esq
A Williamson Esq	H B Peirce Esq
R G Bamford Esq	A Carnall Esq
J W Anderson Esq	R I B Tees ler Esq (*Secretary*)
A C Tweedy E q	

Mr Bamford on behalf of the Madras and Southern Mahratta Railway Company stated that the company had decided to continue their own scheme for a technical school in connection with the Perambur Workshops and that they were not therefore prepared to take an active part in the matter of establishing techni al schools elsewhere

A regular discussion on the questions submitted to the conference for consideration was then entered upon

As regards the first question— the necessity or otherwise for provision of technical education by Government in the north of the city of Madras —Mr Harris did not think that technical education on the ordinary lines had much value There seemed little object in training men unless there were openings for them afterwards

Mr Chatterton was of a different opinion In the Chengalvaroya Naicker s Technical Institute courses of instruction for mechanics were being provided and such of the ex students of the school as were employed in the Pumping department he had found to be fairly satis factory As regards the d mand for more highly trained labour there were already about 1 000 internal co bustion engines in use in this Presidency Further that the development of agricultural and industrial enterprise—in connection with which the Pumping and Boring department were erecting a large number of engines—was entirely dependent on the supply of trained mechanics whilst on the other hand it provided remunerative employment for properly qualified men A man could earn from Rs 30 to Rs 100 according to his ability

Mr Williamson considered it essential that the apprentices to be trained should be able to read and write English without a knowledge of which they could scarcely benefit by the instruction

Mr Chatterton pointed out that the question of State apprentices was not the one now under discussion but that perhaps it would be as well to deal with it here although it had not been specifically mentioned as an item in the agenda. He explained that whereas it was proposed to throw State apprenticeships open to all classes of artizans their award would be made conditional on the candidates possessing the necessary preliminary elementary education According to his original proposal he hoped to get 200 apprentices of which number the railway company promised to take 50 What he should like to know now was how many apprentices the firms repsesented by other members of the conference would be prepared to take

Mr Carnall said that he would take 12 to begin with and afterwards four a year

Mr Peirce said that he could take quite a large number of apprentices say from six to ten a year as he had plenty of work for them

Mr Tweedy said he could take four or five and Mr Anderson three

Mr Harris remarked that he would be prepared to take on some apprentices also but he had no intention of paying them any wages during the first year s course This was the principle on which he was acting now and he considered that if a boy was not sufficiently keen to work under such conditions he w s not worth training

Mr Williamson support d this view but Mr Chatterton said that it was not altogether a question of keenness In industrial schools it had been found that owing to domestic circum sta ces it was impossible for the n ajority of the pupils to work as unpaid apprentices however much they might wish to do so He w s convinced that at first any how it would be neces sary to pay the apprentices and he had suggested an allowance to be paid to the Superin tendents of the workshops in which the boys were undergoing training and spent as found necessary An Inspector appointed by Government would visit the works at intervals to see how the apprentices were getting on

Mr Williamson thought the idea of inspection an excellent one and suggested that it be carried still further that the inspector should take an active part in the education of the apprentices where possible

The commercial members of the conference, however, strongly objected to any interference of this kind

Mr Harris again questioned the value of apprenticeships—at least from the point of view of the works manager He had tried the experiment for years and he found that when ever he got a good man he was always taken away by some other employers of labour

Mr Chatterton thought this was a question of professional morality rather than of technical education and thought that the training of a larger number of apprentices would ultimately do away with such regrettable incidents' as those mentioned by Mr Harris

As regards the class of apprentices to be selected Mr Harris strongly objected to Anglo Indians (Eurasians or the domiciled community) as he found no use for them

Mr Peirce said he had started a system of apprenticeship and by careful selection had now got five Anglo Indians and four Indians who were doing excellent work

Mr Chatterton said that his experience showed Indians, on the whole, to be the better workmen

Replying to a question as to what would be done in the event of apprentices proving unsatisfactory, Mr Chatterton said that he supposed they would, in the first instance, be appointed on probation for three months within which time they could be summarily dismissed if found unsatisfactory After that they would of course still be subject to the orders of the works manager and subject to dismissal for any specific reasons

Mr Chatterton then suggested the following resolution —

'That it is necessary to establish a system of State apprentices among the engineering shops in the north of Madras and that provision be made to provide elementary technical education in a Government school to be established near the Ba in Bridge Railway station'

Mr Williamson did not wi h to commit himself to the latter part of this resolution as it had not yet been properly discussed He suggested that the resolution be taken in two parts

The resolution was therefore re stated as follows —

Resolution 1 — 'That it is necessary to establish a system of State apprentices among the engineering shops in the north of Madras' and in this form was accepted *nem con*

The second part of the original resolution was then taken up

Mr Peirce wanted to know whether the education provided in the technical school would be limited to apprentices or whether it would be open to all also where the apprentices were to be secured from

Mr Chatterton presumed that any one who wished to do so could attend As regards apprentices Government would undertake to furnish a supply

The second part of the original resolution—

Resolution 2 — That it is necessary to make some provision for technical training in a school outside the workshops' was then submitted

Mr Williamson wished to *substitute* the word desirable' *for* necessary'

Mr Harris pointed out that the second resolution followed from the first If apprenticeships were desirable then technical education was necessary

After discussion the second resolution was adopted in the above form

The nature of the education to be given in the school and the hours during which it should be opened was next considered

Mr Chatterton said that in the previous meeting the members had accepted the principle that the classes would have to be held during working hours and had been in favour of early morning lectures say from 7 A M to 9 A M

Mr Harris was of opinion that the arrival of a contingent of apprentices in the works two hours after opening time would be most demoralising to the other labour employed

Mr Peirce did not think that the fact of apprentices coming late to works would cause much dislocation After all it would be well known that they had been attending lectures and not loafing and they would all arrive in a body

On further discussion it was eventually agreed that the best time for lectures would be from 2 to 5 P M and the following resolution was passed —

Resolution 3 — 'That instruction be given in the school to each boy on three days a week in the afternoon

Regarding the nature of the instruction Mr Harris emphaised the fact that what was wanted, in practice, was maistries rather than skilled workmen He thought it essential also that apprentices should specialise and should be brought under rigid discipline

Mr Chatterton said that the idea was to train competent workmen which was the class of men that he thought there was the greatest demand for

Mr Bamford pointed out that the two things were really the same—after all maistries were usually chosen by a process of selection from amongst the workmen so that the better the workmen the better the maistry

As regards the subjects to be taught Mr Bamford was requested to furnish the meeting with a copy of the proposed curriculum in the Perambur scheme This he promised to do

Mr Chatterton thought that the teaching should be somewhat as follows —

One afternoon devoted to arithmetic and elementary mathematics one afternoon to drawing and the third afternoon to mechanics and steam engines

Mr Bamford said that the educational qualification demanded for admission to the Perambur school was one corresponding to the Lower Secondary

On this point the following resolution was adopted —

Resolution 4 — That the instruction be given in English and that the boys should possess such educational qualifications as to enable them to take advantage of it

The question of site was then raised

Mr Chatterton said that he had inspected sites near the Basin Bridge station and that the only suitable one he had been able to find were the premises formerly occupied by the Government Harness and Saddle y Factory These were now vacant and possibly permission to use them at any rate for the time being could be obtained The question of site was rather an important one and had to be decided with an eye to the future The possibility of the Madras and Southern Mahratta Railway ultimately joining in the scheme had also to be considered

After further discussion it was decided that the general locality suggested in the first meeting was all things considered the best and the following resolution was adopted —

Re olution 5 — That the school should be established as near Basin Bridge Railway station as a convenient site can be found

Mr Chatterton considered that the discussion of the remaining questions of the agenda could with advantage be postponed until the next meeting so as to give the members of the conference an opportunity of thinking them over So far as management was concerned he was anxious to see the same vested in a mixed committee He thought one Railway Officer two representatives of firms and one Educational Officer would make a repres ntative and use ful board

Then there was the question of staff to be considered This he thought was really the crux of the whole problem I would have to be decided whether the taff was to be European or Indian and he would be glad to hear the views of the members as to the extent to which they could find instruc ors from amongst men of their own staff

Mr Williamson pointed out that the discussion had now narrowed down to mechanical engineering He thought that the word technical education had a more comprehensive meaning and accordingly suggested that at the next meeting other forms of trades or crafts might advantageously be considered

The meeting adjourned at 9-30 A M until Tuesday the 6th February 1912

(IV)

The third meeting of the Committee dated the 6th February 1912

PRESENT

A CHATTERTON Esq (*President*)	H E HARRIS Esq
A WILLIAMSON Esq	H B PEIRCE E q
R G BAMFORD Esq	A CARNALL Esq
J W ANDERSON Esq	K T B TRESSLER Esq (*Secretary*)
A C TWEEDY Esq	

The minutes of the last meeting having been read were adopted

The committee proceeded to discuss the remaining subjects on the agenda

As regards the probable number of students for which provision should be made in the Institute Mr Chatterton was of opinion that in view of the separate arrangements made by the Railway Company the attendance would at any rate to begin with not exceed 50 or so

Mr Harris thought that the number of apprentices might be 75 to begin with, but the views of other members of the Committee inclined towards the lower estimate and it was generally considered that the attendance would at first be confined to State apprentices though Mr Carnall thought that in time, other persons would be attracted when it was found that the instruction given conferred some tangible benefit on the pupils

Mr Chatterton thought that it was unnecessary for the committee to bind itself down to a definite number and the next question—that of management—was then brought up for discussion

Mr Chatterton said that at the last meeting he had suggested a committee consisting of one Railway officer two representatives of firms and one officer of the Educational Department The idea was to keep the school in touch with the workshops and ensure business like and practical control If a suitable Fducational officer were on the committee the work of the rest of the committee would be comparatively light The committee could meet once in a quarter or whenever necessary and their duties would be mainly to decide the practical details of the course of training now proposed such as the length of time which apprentices should remain in each shop and so on

Mr Williamson thought that it was proposed to make the apprentices specialise

Mr Carnall agreed with specialisation but thought the apprentices would have to go through a general course first

After further discussion the committee passed the following resolution —

Resolution 6 — That the management of the institution be vested in a committee to be nominated by Government and to be representative of the various interests concerned '

The next question in the agenda was the amount of support which the interested companies would be prepared to give to the proposed school

Mr Harris said that he was prepared to forego the grant proposed on account of the training of apprentices but

Mr Chatterton pointed out that this grant was intended for payment to the apprentices and not the employers

Mr Anderson remarked that the practical proof of their support lay in their allowing apprentices to attend during working hours He did not think that the direct pecuniary support that the firms could give would amount to much as compared with the total cost of maintenance of the school

Mr Chatterton said there was no intention of binding any one down to a definite promise all he wished to ascertain was the feeling of the committee on the matter The Railway Company, seeing that they were making their own arrangements could scarcely be expected to make a contribution but he assumed from what had been said that the representatives of the other companies were on principle inclined to give some sort of support to the school

This was assented to the members however pointing out that they did not wish to commit themselves to anything definite on this point

Mr Harris pointed out that the whole scheme was at present still more or less of an experiment and that it did not appear in the present stage necessary to discuss matters such as those of financial support

Mr Chatterton agreed that things of this kind might well be left to the Managing Committee

The question of fees was next discussed

Mr Chatterton pointed out that it had previously been resolved that no fees should be charged to apprentices

Mr Williamson thought that there should be something of the nature of Bursaries started, and in this case thought that all pupils in the school might pay fees

As regards outside pupils Mr Carnall presumed that no outside pupil would be admitted unless he had some practical training in a workshop Such pupils might perhaps be charged fees but he personally was rather against fees of any kind at the beginning

Mr Anderson however remarked that on the principle of anything worth having being also worth paying for, he thought that apprentices should pay a small fee, the more so as they were to be paid and could therefore afford fees

Mr Peirce agreed with fees and suggested that the apprentices might be asked to pay 5 per cent on the sum they would get

Mr Chatterton suggested fee of As 8 a month but explained that the question was not a financial one It was not a matter of income, but a question of whether the levying of fees was likely to improve the character of the school or not He thought it would and considered that, on principle all pupils should pay something

Mr Williamson suggested that scholarships should be given on the results of examinations similar to those of the science and arts in England These lectures were very cheap and he thought that the fees charged in the school should be low

Mr Anderson said that a course of Mathematics cost 2/6

The committee finally decided that a fee should be charged to all the apprentices and passed the following resolution —

Resolution 7 — That a committee recommend that a fee should be charged to all apprentices.

The amount of the fee to be charged was left to be decided by the Managing Committee

In introducing the last item—the question of staff—Mr Chatterton hoped or rather anticipated that the firms represented at the meeting would assist in providing a suitable staff

Mr Peirce said he might be able to do something in this direction

Mr Harris said that he had no time to attend to any other work besides his own legitimate business and had no one else to spare

Mr Chatterton stated that if there was any probability of getting a proper man suitable remuneration would be given

Mr Bamford said that he had discussed the question with the Locomotive Superintendent of the Madra and Southern Mahratta Railway but was afraid that the railway company could not possibly spare any members of their staff for three afternoons in the week

Mr Chatterton agreed that three afternoons a week was perhaps too much to expect but wished to know whether it would be unreasonable to ask private firms to send somebody for one afternoon in the week

Mr Harris said the fact of the matter was that none of the firms in Madras had a large enough European staff to be able to spare any of their men

This view was generally accepted

Mr Williamson suggested that the Rev W Brown of Perambur might be approached as he could take the mathematical side and further pointed out that the discussion had so far been limited to Mechanical Engineering As the matter under discussion had been termed Technical Education and not Engineering he thought the committee should discuss other industries also such as spinning weaving and other mill industries

Mr Chatterton said that it was open to any members to make suggestion although he considered that the present conference had been called mainly with the idea of discussing Mechanical Engineering As a matter of fact however a good deal was being done in other directions besides engineering He had alluded to the proposed tanning school already Besides this Government were considering proposals for the establishment of a weaving and dyeing institute in Madura where courses of instruction would be given in modern processes Madras was not a centre for textile industries and he did not therefore consider that facilities for this kind of work were necessary there in addition to those to be provided in Madura Then again one of the principal indigenous industries in Madras—metal work—had already been taken up and the Indian Aluminium Company which represented the result of Government action in that direction was one of the largest and best equipped factories of its kind anywhere So that there appeared to be little necessity for any further steps with regard to metal work

Mr Anderson said that the teaching in the school might be limited to mechanical engineering to begin with and if that proved a success then other industries might be taken up

Mr Peirce alluding to the scarcity of plumbers in Madras thought that plumbing might be included in the subjects taught at the school

Mr Chatterton did not regard this as necessary He thought that if the right class of man were taken he would quickly pick up all that it was necessary for him to know

Mr Anderson suggested Electrical Engineering but Mr Chatterton thought that questions of this kind could best be decided by the Managing Committee when appointed

The Committee then proceeded to consider the form of report

Mr Chatterton explained that there were two courses open to them either to send up the resolutions arrived at without further remark or else write a separate report

Mr Bamford thought the latter course preferable and suggested that a draft report be circulated

Mr Chatterton suggested that if any member had any special remarks to make they might be communicated to the Secretary for inclusion in the report

Mr Bamford thought it better that the minutes and draft report be sent to all members who could then make their remarks thereon A final report could then be drafted at the next meeting

This procedure having been agreed upon the meeting adjourned at 9-45 A M until Tuesday the 20th February at 8 A M

(v)

The fourth meeting of the Committee, dated the 20th February 1912

PRESENT

A CHATTERTON Esq *President*	H B PEIRCE Esq
A WILLIAMSON Esq	A CARNAL Esq
R G BAMFORD Esq	HARIDAS VISONJI Esq
J W ANDERSON Esq	K T B TRESSLER Esq *Secretary*

The minutes of the third meeting having been read some verbal alterations were proposed and these being made the minutes were accepted

The Committee then proceeded to consider the draft report to be submitted to Government

The representatives of the Railway company suggested that the opening sentence of paragraph 10 would be better expressed in a modified form as follows —

If the railway company establish a school of their own they will naturally not be prepared to contribute towards the support of the institution '

The amendment was accepted

Mr Chatterton then read a joint memorandum by four of the other members in which various alterations were proposed In the first place objection was raised to the mention of the Chengalvaroya Naicker s Technical Institute in the report on the ground that this might lead to that institute being turned into the proposed technical school

Mr Chatterton explained that this was precluded by its situation Moreover it was evident that had such a thing been contemplated, the committee would never have been summoned He did not think that there was any danger whatever to be apprehended in that quarter

The amendment was accordingly withdrawn

The second point raised was the question of holding classes in the morning

Mr Peirce explained that he and several of the other members still considered that the morning would be a better time for cla ses than the afternoon

Mr Chatterton thought the question had already been decided but it could of course be reopened Personally he was in favour of afternoon classes for one thing apprentices would get their dirty work over once for all by midday and could dress themselves properly for the afternoon for another he thought that it would be difficult to get teachers to work in the early morning

Messrs Anderson Carnall Peirce and Haridas Visonji preferred morning classes whilst Mr Williamson preferred afternoon classes

Mr Bamford pointed out that there had been some diversity of opinion on this point when previously discussed He preferred afternoon classes at the same time if the whole of the morning were devoted to industrial work (and not only a part as originally contemplated) Mr Harris objection which had previously turned the balance in favour of afternoon classes fell away

It was also suggested that half the classes might be held in the morning and half in the afternoon

Mr Chatterton did not see any necessity for changing the report After all, it was always open to the Managing Committee to introduce changes if found desirable He thought perhaps the introduction of the word probably ' in paragraph 6 would meet the case This view was accepted

The third point raised in the joint memorandum was the clause occurring in paragraph 8— ' those practically engaged in the exercise of their trade — it being held that the expression was too vague and might lead to all sorts of undesirables securing admission or rather obtaining the school certificate

Mr Chatterton explained that it was proposed that each apprentice should have a service register in which the firm by which he was employed would enter the details of his work in the shops This register would constitute the apprentice s certificate so that people who were not receiving regular training could not secure a certificate

Mr Peirce pointed out that there were a number of petty employers of no standing what ever who could as paragraph 8 ran at present, always claim to be entitled to fill up regi ters and by so doing would entirely nullify the value of the regi ter or certificate

Mr Chatterton thought that the fact of instruction being given in English would keep out undesirables besides the school would be under the supervision of a responsible education officer He suggested that the substitution of the word ' proper course for ' period " would make the views of the Committee clear

This amendment was accepted

The fourth point raised was that of management It was considered by the signatories of the memorandum that as the railway company intended to run their own technical school, there was no necessity for them to be represented on the managing committee and that the committee should be composed of three representatives of the firms in Madras of which the Public Works Workshops may be considered one for the purposes of this committee and an officer of the Educational Department

Mr Chatterton explained that as indicated by the alteration in the report suggested by the railway representatives it was not definitely known that the company would establish a technical school Even supposing they did he thought that Government would be glad of the assistance of a railway officer on the committee and for that reason he was not in favour of excluding railway representatives altogether

Mr Peirce said that there was no intention of excluding the railway only the firms would like to be better represented

Mr Bamford thought that in this case the best thing to do would be to give the firms an extra representative and to put on the General Superintendent of the Public Works Workshops also

Mr Chatterton suggested that the General Superintendent of the Public Works Workshops might be put on permanently and the composition of the Committee otherwise left as before

This amendment was accepted and the necessary addition made to the report accordingly

The fifth point in the memorandum dealt with paragraph 10

The representatives of the firms had some hesitation in committing themselves to a promise of pecuniary support

Mr Chatterton explained that the paragraph in question had been worded very vaguely and could scarcely be interpreted as implying any definite obligation As a matter of fact he could state with some assurance that the firms would not be called upon to contribute But what Government wanted to know was whether the firms would take an active interest in the school and this is why he thought the question of support should be touched upon He presumed that the firms were prepared to do what they could to make the experiment a success

Mr Carnall said that he personally was very anxious to see the school established and he had no doubt that his colleagues also would be glad to show their interest in the venture in such minor ways as offering prizes etc The only thing was that he did not care to make definite promises In view of Mr Chatterton s explanation however he thought the paragraph might remain as it stood

This opinion was accepted

The last point raised was the question of appointments

The members wished to know what proportion of the apprentices should be available for employment by Government after they have completed their articles as employers were naturally not willing to train apprentices merely for the use of Government

Mr Chatterton explained that so far as he knew Government did not want any of them All the institute intended to do was to train a better class of men and its object was completely served if the apprentices obtained suitable employment

Mr Carnall pointed out that firms had much difficulty now in getting men owing to the better wages offered by Government He also regretted that so much Government work was sent home for execution So long as local firms did not get a better chance engineering in this Presidency could not develop properly

Mr Chatterton in replying said that the latter point was one with which he could not deal as regards the former he explained the procedure followed by the department of Industries in dealing with ryots and said that the position of the Department in this matter was only that of a Consulting Engineer The ryots were perfectly free agents

Mr Carnal said he was under the impression that the idea in starting the technical school had been partly to obtain Government drivers for the installations put down by the department of Industries He now understood from Mr Chatterton s remarks that Government did not supply the drivers and the point raised therefore fell away

As there were no other remarks offered Mr Chatterton on behalf of Government thanked the members of the Committee for the trouble they had taken in being present at the meetings and the sitting terminated at 9-30 A M

(vi)

NOTE

(By Mr R C Bamford, Madras and Southern Mahratta Railway)

In March 1907 the Locomotive Superintendent addressed the agent with a view to obtaining formal sanction to the opening of Technical classes in the Perambur Workshops during working hours and the grant of an allowance for those who conducted the classes

The proposals put forward by the Locomotive Superintendent were approved and sanction was accorded in G O No 1057 Railway dated 6th July 1907, to the grant from Revenue of Rs 100 *per mensem* towards the maintenance of technical classes for apprentices serving in the Perambur Workshops

2 In April 1908 definite arrangements in connection with these technical classes were made by the Locomotive Superintendent and the following draft instructions and curricula were drawn up —

It is compulsory that first class European and Eurasian apprentices shall attend the technical classes and such first class native apprentices as are required so to do must also attend the classes The training for the native apprentices, unless they shew exceptional ability, will be such as will be useful if they are promoted to Maistries or Chargemen

The classes will be held during working hours but the students will be required to do a certain amount of home work a a preparation for their class work

Until further instructions are issued classes for different subjects as under will be held on the days and at the times stated —

MONDAYS

(7 to 8–45 A M)

Advanced Arithmetic and Mensuration. Elementary Applied Mechanics and Steam

TUESDAYS

(7 to 8–45 A M)

Physics and Chemistry and Advanced Geometry and Drawing

(On alternate Tue days)

WEDNESDAYS

(7 to 8–45 A M)

Elementary Arithmetic and Mensuration Elementary Geometry and Drawing

THURSDAYS

(7 to 8–45 A M)

Advanced Mechanics and Steam The Locomotive its failure and remedies

(On alternate Thursdays)

FRIDAYS

(7 to 8–45 A M)

Advanced Arithmetic and Mensuration Elementary applied mechanics and steam

SATURDAYS

(7 to 8 45 A M)

Locomotive practice

A certain number of text books for the use of technical classes will be in the custody of those taking the classes and such books can be lent to the students for the purpose of helping them in their home work

In promoting apprentices in the several shops preference will be given to such lads as take an intelligent interest and show marked progress in the technical classes

The syllabus that will be worked to for the present is as follows —

Arithmetic

Elementary course I

Multiplication Division Vulgar and Decimal fractions their meaning and application for practical purposes Percentages averages, the use of Decimals Contracted methods of multiplying and dividing numbers omitting all unnecessary figures

Advanced

Cour e I and exercises in areas weights volumes mental arithmetic, calculation of numerical values from formulæ Extraction of square and cube roots The meaning of a common logarithm the use of logarithms in making simple calculations involving multiplication, division involution and evolution using four figure tables

Algebra

Elem ta y rse I

Meaning and use of Algebraic symbols Addition subtraction multiplication and division Use of brackets substitution of numerical values for letters in formulæ Easy fractions factors

Ad ced

Course I and easy equations of the first degree in one and two unknowns Plotting of points and the construction of simple graphs on sectional paper with application to the solution of simultaneous equations of the first degree

Mensuration

El m tary rse I

The simple properties of a triangle paralle logram and circle Mensuration of simple plain and solid figures Rectangle Triangle Circle Cube Prism Pyramid Sphere Cylin der and Cone

Ad d

Course I and exercises with special refer ence to Engineering Trade such as weight of bolts rivets pipes boiler tubes steel plates beams and simple forgings

Geometry

El menta y urs I

Formal demonstrations of the Euclidean type are not required but pupils must be able to state in clear language the experimental evidence for the substance of book I Forms of simple solids straight lines and angles Symmetry of figures Constructions of trian gles with given parts Sum of angles of a triangle

Ad ced

Course I and properties of the circle deduced from symmetry Angles at centre on equal arcs Tangents to circle Inter section by two circles The measurement of areas rectangle triangle parallelogram trapezium Euclid 1 47 and Geometrical illustrations of equations

Drawing

El m tary rse I

Use of instruments degree of accuracy attainable setting out angles by various methods Methods of dividing lines and angles Geometric loci

Ad c d

Course I and scales Projections of points lines and solids Engine and machine details

Mechan cs

El m ta y rs I

Composition and resolution of displacements velocities accelerations and forces Methods of estimating and measuring work and H P Laws of friction modulus of machines Mechanical properties of air and gas

Ad nced

Course I and strength and elasticity of materials Testing of materials strength of boilers cylinders riveted joints etc

Ste m

El m ntary

Generation of steam Advantages and methods of using steam expansively Con densation of steam Boilers their construction and operation

Ad d

Course I and steam engines Indicator and indicator diagrams Calculations rela tions to I H P and M E P of engines the amount of steam and of coal required under given conditions

Experimental Physics

Measurements of length area volume time matter and energy Theories as to structure of matter inertia mass weight universal gravitation The elastic and other properties of solids liquids and gases The idea of temperature and heat the nature of heat effects produced by heat

Technical Chemistry

Fuels—Composition sampling and analysis of fuels Measurements of high tempera tures Calorimetry Production and composition of producer gas Methods of using solid liquid and gaseous fuels Control of combustion

Oils—Testing of mineral oil Characteristics of commonly used oils and fats their uses Testing of vegetable and animal oils

Locomotive practice

General conditions climate water and fuel Railway limitations of dimensions and weights Tractive force Adhesion Resistance of trains Estimation of weights total and distributed Boilers types proportions Framing plate and bar) bogies valve gears balancing journals springs etc

N Ref on Cur No 436/12, *dated* 16*th March* 1912

Submitted to Government

2 The Superintendent of Industrial Education may, as suggested by Mr. Chatterton, be required to formulate a definite scheme in view to carrying out the Committee's recommendations

A G BOURNE,
Director of Public Instruction

Order—No 776, Educational, dated 24th August 1912

The Government have perused with interest the useful and informing report submitted by the committee appointed in G O No 28, Educational, dated 16th January 1912, to consider the question of improving industrial and technical education in the north of Madras They thank the members of the committee for the service which they have rendered

2 The Government accept generally the recommendations made, and the Superintendent of Industrial Education will be requested to formulate and submit as early as possible definite proposals for the establishment of State apprenticeships and the opening of a technical school on the lines advised by the committee, together with an estimate of the cost involved As regards the question of accommodation for the school, the Government await the report called for on the point in paragraph 5 of G O No 613, Educational, dated 10th July 1912

(True Extract)

L. DAVIDSON,
Ag Secretary to Government

To the Director of Public Instruction
Members of the Committee
Revenue Department
Financial Department

G[illegible] 28]

07-10-10

Endorsed

Bus

Con File No 462
Serial No. 09

Diary No of letter replied to 9318

Proceedings of the Government of His Highness the Maharaja of Mysore

GENERAL AND REVENUE SECRETARIAT
(.)

READ —

190

Date of issue 29 10 10

Signed by mKmR

ORDER THEREON — No 35-85-1
EDn 462-09-2

10 10

The Govt consider that the subject of improving the Industrial Schools in the State should engage ~~their~~ early attention, and that it is essential that

over

SUBJECT

MGCPB—20 000—24 2 0

Ou 28/10 28/10

a definite policy and plan of work should be adopted so as to secure the best possible results in this important branch of Education They are accordingly ~~therefore accordingly~~ pleased to appoint a committee consisting of the undermentioned gentlemen for considering the subject and submitting their proposals

1) Mr M Viswesvarah Chief Engr (President)
2) - J. Weir - Insp Genl of Ed
3) - V Rangaswami Iyengar, Exec Engr
4) - C Krishna Rao Hd Master Govt Hgr. School, Bangr
+5) - G Subbarama Iyer Supdt Industrial School Mysore

2 The Committee is requested to go into a consideration of the subject in all its aspects, and submit a full and detailed report, within 6 months, ~~if from shatang~~ indicating, among other

G R.S. 27]

GENERAL AND REVENUE SECRETARIAT

(Continuation Sheet if form)

other things how the industrial Schools should be conducted according to a comprehensive programme and what defined courses of systematic training should be followed

3 The Insp Genl of Edn will furnish the Committee with all ~~the necessary~~ the required information that may be required about the working of the existing Industrial Schools, ~~at present~~ and other necessary particulars connected with them

Print

CSB 28/9/11
Offg Secretary

10 9 11

To
1) M Visvanath Esqr Chief Engr & President of the Committee
2) Other members of the Committee
3) The Dy of Edn

Edn 462-09-6

4

Bangalore,
29th April 1911

From

Visvesvaraya Esq ,M I C E ,
President, Industrial Schools Commit
Bangalore

To

C S Balasundaram Iyer,Esq ,B A ,
Offg Secretary to the Government of
His Highness the Maharaja of Mysore,
General & Revenue Departments,
Bangalore,

Sir,

With reference to Government Proceedings No 3585-9/ Edn 467-09-2 dated the 28th October 1910, appointing a Committee for considering the subject of improving the Industrial Schools in the State and asking for a report within six months, I have the honour to state that the submission of the report which is due on the 28th April will be unavoidably delayed on account of the absence of Mr J Weir Inspector General of Education, on leave

2 Mr Weir will return to duty in June next and the Committee expect to be able to submit their report by the end of August following

I have the honour to be,
Sir,
Your most obedient servant

President

8/9/11

5

GRS 26J

File No 462 09
Serial No 8

Diary No of letter replied to 7059

No 2096
GRN 46209-

General and Revenue Secretariat
(Gen)
the 19

To

13 9 11

The President, Industrial Schools Committee, Bangalore.

Date of issue 13 9 11

Signed by NRBR

His office letter no 19 & 29th April 1911 stating that the Committee expect to be able to submit their report by the end of August 1911, then referring called for in GO no 3583-9/Gen 462-09 & 29th Oct 1910, regarding the improvement of the industrial schools in the States

Has the honour to invite reference to the above and to request to be informed when the report may be

over

SUBJECT

copied by 11/12/9

expected here

By. 2001.

for 6/9/11

for Lay

8/9 C(26)

5 9 11

List of enclos

Copied by

Examined by

61 B—20 000—26 9 10

No 8530

Di / No 1611

1910

SECT Edu

FILE No 462

SERIAL No 9

7

Bangalore

16th September 1911

From

M Visvesvaraya, Esq , M.I C E ,

President, Industrial Schools Committee,

Bangalore

To

C S Balasundaram Iyer, Esq , B A ,

Offg Secretary to the Government

of His Highness the Maharaja of Mysore,

General and Revenue Departments,

Bangalore

Sir,

With reference to your letter No 2896 dated the 13th September 1911, I have the honour to inform you that the work of the Committee for the improvement of the Industrial School of the State was interrupted, first for two months on account of the absence of Mr Weir on leave, and for a second time by his lamented death

2 I expect the Committee will be able to submit the report in a complete form by the 31st October or 15th November next at latest

I have the honour to be,

Sir,

Your most obedient servant,

President,

Industrial Schools Committee

DIAR No 2660

1209/2010

SECTION Edn

FILE No Bangalore, 462,

16th November 1911.

No 441

Enc (1 report)

Private

From

The Committee appointed in Government Order
No 3585-9/Edn 462-09-2 dated
28th October 1910

To

C S Balasundaram Iyer, Esq ,B A ,
Offg Secretary to the Government of
His Highness the Maharaja of Mysore,
General and Revenue Department

Sir,

As desired in Government Proceedings No 3585-9, Edn 462-09-2 dated 28th October 1910, we have the honour to submit herewith a draft report with proposals for the development of Technical Education in Mysore

2 The draft will be circulated to Government officers and gentlemen interested in the subject of Technical Education, so that any one who has any additions, omissions or alterations to suggest, may have an opportunity of communicating his views to the Committee

3 As Government will not find time to take any action on those proposals for the next two months, we propose to revise the same and submit the final report, in January or

February

February next, after hearing the opinions of experts and persons interested in, or qualified to form an opinion on, the subject

We have the honour to be,

Sir,

Your most obedient servants,

M Venkatraya

V Ramasamy Iyer

Gnanasambandam Iyer

C Krishna Rao

SCHEME

of

TECHNICAL EDUCATION IN MYSORE

November 1911

BANGALORE

Printed at the Government Press

11

SCHEME OF TECHNICAL EDUCATION IN MYSORE

REPORT

by

THE COMMITTEE

appointed in government order

No 3585-9/Edn 462-09-2 dated 28th October 1910

November 1911

TECHNICAL EDUCATION IN MYSORE

1 - PRELIMINARY

The government order of 28th October 1910, reproduced in the Appendix, appointed this committee for the purpose of formulating a definite policy and plan of work for developing industrial education within the state We were asked to consider the subject in all its aspects and submit a full and detailed report laying down a comprehensive programme with defined courses of training

2 The first meeting of the committee was held on 25th November 1910, at which, at the request of the committee, Mr V Rungasawmy Iyengar, undertook the duties of secretary to the committee Work was interrupted for a time by the departure of Mr Weir on leave from 19th April 1911 On his return, Mr Weir attended a meeting, on 27th June 1911, by which date the committee had decided the bulk of the recommendations embodied in the report

The

The sudden death of Mr Weir on 31st July 1911 deprived us of the services of a most valued - - - - colleague Before proceeding with the - report, we desire to place on record our high appreciation of the active interest Mr Weir evinced in our work and - our profound regret at his premature - - demise

3 We have found some difficulty - in devising a programme, which, while - fulfilling the terms of the Government - Order as regards comprehensiveness, - - would at the same time be well within - the limited resources of the State - - At an early stage of our deliberations, we decided that Rs 3 lacks was the proper minimum annual expenditure that should be - incurred at the commencement for the - - development of technical education in the present financial circumstances of this State

As complete institutions - - cannot at once be established for every form of technical or commercial education, we have thought it necessary to - content ourselves with recommending the establishment of two large institutions, one in Bangalore and another in Mysore Even these will not have all the equipment necessary according to Western - - standards for a long time to come - -

But we believe that, by laying down a syllabus and appointing a staff who - - know something of the subjects they - - teach, at least a commencement would be made in providing specialised training for boys anxious to prepare themselves for industrial occupations

4 In the years 1874-78, there - - was an Engineering School in Bangalore in which the higher ~~forms of~~ education in Engineering and Forestry was given, - and that education ~~was~~ sufficed to train officers, one of whom officiated as - - Chief Engineer of this State a little - while ago and another has been ~~in~~ occupying the office of the Conservator of - Forests in Mysore and yet the - - - College of the Seventies employed only - one European Executive Engineer and one Indian Lecturer conditions are more - favourable now and more money can be - - spent on technical education If in - - some of the subjects the training given is found to be inadequate, it is proposed to send out students to England or the Continent of Europe to complete their education in - one or more of the leading institutions of Western countries

2 - EXISTING INDUSTRIAL SCHOOLS

---

5 There are at present 7 Government Industrial Schools in the State - The one at Mysore was started in March - 1892 The other schools were started - under G O No 14668-77/Edn F 1 4-96 - - dated the 7th April 1903, which says - - "The object in view should be not the - imparting of any ideal, theoretical or - scientific course of instruction but the teaching of such industries and trades on improved methods as are adapted to - - supply the present wants of the people - such as carpentry, weaving, silk rearing, iron work, rattan work, lacquer - - work, &c , and to turn out a number of pupils fully equipped with the means of earning their livelihood"

The Order goes on to say that the weaving schools were expected to - - train young boys in weaving various - - kinds and patterns of cloth on fly shuttle looms so that the weavers of the - - locality concerned might introduce - - - improvements in their looms and be able to earn more wages by increasing their production

6 The Mysore School has a full time Superintendent helped by an Assistant and maistries The other schools are looked

looked after by persons who hold appointments in the local High or Anglo-Vernacular Schools These men are not able to give sufficient time to their additional duties and the schools are virtually left in charge of maistries In spite of these defects, the weaving sections of these new schools - have done good work by demonstrating to the public the advantages of using fly-shuttle looms

Cloths of finer counts unknown before are now produced In - - - Melkote and Hole Narasipur, silk and - - cotton yarn are dyed locally to a certain extent The school at Chennapatna, is doing very good work The Mysore School has developed in all directions

7 Besides the above, there are 11 aided and 3 private schools Carpentry is taught in 18 schools, blacksmith's work in 4, rope making in 2, and each of the following industries in one or more institutions -

(1) Pottery and tile making,
(2) Fitter's work,
(3) Masonry,
(4) Agriculture,
(5) Lacquer work,
(6) Musical wire making,
(7) Nature imitation art in wood,
(8) Embroidery,
(9) Lace making,
(10) Knitting,
(11) Brass work,
(12) Drawing in all branches

Of the aided institutions, the schools at Kolar and Tumkur have done - excellent work

8 The expenditure incurred on - - Government institutions at present, - - excluding materials used in workshops, amounted in 1910-11 to Rs 32,262 The grant paid in aid of industrial schools amounted to Rs 8,710 Thus the total - annual expenditure, according to the - - accounts for 1910-11, amounted to - - Rs 40,972 (Vide Appendix 11) Notwithstanding the good work- - they are doing, we consider that the Government schools are not maintained up to the requisite - - standard and need to be reorganised

3 GENERAL OUTLINE OF INSTITUTIONS PROPOSED AND THEIR OBJECT

---

10 It is proposed to provide - - facilities for giving instruction in all the three grades of technical education, higher, secondary and primary In the elementary courses, instruction will be given to the artizan classes and to - - people

people actually engaged in business and trades, such as

Building,
Carpentry,
Furniture making,
Weaving,
Shoe and boot making,
Tailoring,
Manufacture of carpets,
Mats,
Cooking utensils (brass, copper and bell metal),
Artware,
Pottery,
Printing, &c

The secondary technical education has for its object the training of mechanics, assistant formen, teachers - - for industrial schools, &c In addition to instruction in one or more trades, - - the men of this class will have some - - general training in Correspondence, - - Commercial Arithmetic, Elementary Mechanics, Physics and Chemistry

The higher technical education is intended to qualify the candidates - - for themanagement of factories and - - - other large industrial concerns. An - - attempt will be made to provide commercial and business training for men in - all grades of occupations

11 It is proposed to start a - - College of Technology in Bangalore to - give instruction in Engineering and in - special industries If, ~~on account~~ by reason of the ~~inadequate equipment~~ equipment being, the instruction - - given in any subject is found to be - -

defective, the ~~candidates~~ students will have to finish their education in other superior institutions in British India or England or other foreign countries

12 For ~~middle class~~ secondary education, a model school of Technology will be - - - maintained in Mysore Government have already decided to start an institution of this kind to be called "The Chamarajendra Technical Institute" with which will be amalgamated both the existing Engineering School and the Industrial - School in Mysore A building at a cost of Rs 2,41,215 is under construction - - for this purpose and is expected to be - ready next year

13 The existing industrial - - - schools in the State will be improved - and developed as far as circumstances - permit

14 For all classes of institutions to be started in other centres, - model curricula, staff and approximate estimates are given Any town which - - wants one or more institutions of the classes named might choose from the - - list

15 In many towns and large - - - villages, the cost of starting model - - institutions

institutions may be prohibitive This - difficulty may be overcome by establishing special classes, morning or evening, or a course of lectures For instance, where a fully qualified commercial school cannot be started, one or two commercial classes may be provided in connection - with an existing educational institution When even this is found too costly, morning or evening classes for the - same purpose, may be organised When - there is not much demand for such classes, lectures may be arranged for, for an hour or so, once to three times a - - week, merely to rouse interest in the - subject Where local lecturers are not to be had, itinerant lecturers may be - appointed to visit given centres at - - periodical intervals The main object - is to bring every form of education - - within the reach of the classes of people who desire it, in crude forms at - - first, and more highly developed forms - as resources permit and ~~its~~ The importance - of The Study begins to be understood

16 The two large institutions - - proposed at Bangalore and Mysore will be maintained entirely at Government cost If the Districts wish to take a prominent share in the benefits, students - - should be sent up at the cost of - - -

Municipalities

Municipalities, guilds of tradesmen, - weavers, &c Government ~~may~~ will also give a few scholarships to selected student

17 It is recommended that the - District Boards, Municipalities and - - other local institutions, as well as - - Associations and guilds of tradesmen, - be encouraged to start institutions or classes or organise lectures in ~~subjec~~ subjects which, in their opinion, ~~is~~ are calculated to multiply the occupations of the - - people or increase the volume of business in the locality If the local - authorities or inhabitants make up - - their mind to contribute a substantial share of the cost, Government should ~~be able~~ not hesitate to pay the balance and help ~~the~~ - ~~inhabitants to start~~ to bring the institutions - needed into existence

4 COLLEGE OF TECHNOLOGY IN BANGALORE

---

18 It is proposed that a College of Technology be established in - - - Bangalore to give instruction in Higher Engineering and industrial arts

The object of the institution will be to train students who have - - already received a fair amount of general - - education so as to - - qualify them for taking a leading part in the management of industries and commerce inthe country The training in commercial and economic subjects - - including systems of administration in foreign countries will be of great value to officers of Government who are likely to become heads of districts Some of the trained students will be fit for - - recruitment to the State public Works and Electrical Departments

Object

19 The course including Work Shop practice and laboratory may be divided into three sections - - - - - - - - - - - as under:-

Curriculum

(i) Higher Technical Education

(ii) Instruction in special - - - industries

(iii) Higher commercial training

26 (i) HIGHER TECHNICAL EDUCATION

The following subjects may be included inthe first section:-

(i) Civil Engineering, including Sanitary and Municipal - - Engineering

(ii) Mechanical Engineering

(iii) Electrical Engineering

(iv) Architecture and building construction

(v) Econmic Geology and Minerology

Drawing should be given a - prominent place in the first four - - - divisions, and lessons should be given in photography The detailed courses in Pure and Applied Sciences might be settled by the staff when appointed The instruction which the Institute of Research and the Central College may consent to give in these subjects to students of the College of Technology will be fully availed of, so that there may be no overlapping of courses of - study in the three institutions

The course in this section will be one of three years for each - - branch The first year's course will be common to all and the remaining period

will

will be devoted to special training in the selected branch

Students who have passed the Intermediate or First in Arts examination will be eligible for admission

21 (11) SPECIAL INDUSTRIAL EDUCATION

In this section, facilities will be provided in the college as far as possible for giving technical - - - instruction in the following industries

(1) Textiles, Dyeing, Bleaching and Printing

(2) Ceramics and manufacture of glass

(3) Tanning and leather work

(4) Manufacture of oils, paints and soaps

(5) Sheet metal work

(6) Brewing

(7) Motor Engineering

The full course in this - - - section will also be one of three years The passed candidates of the technical schools will be eligible for admission to this section The course of studies will be of the standard needed to train the pupils for employment as managers of mills or othe similar pos s or as Head Masters of the Technical and Industrial Schools in the mofussil

22 (111) HIGHER COMMERCIAL TRAINING

The subjects to be taught in this section will ~~be~~ include some or all of the following -

(1) Commercial Mathematics

(2) Accounting and Auditing

(3) Banking

(4) Mercantile Law and Practice

(5) Economics

(6) Economic Geography

(7) Statistics

(8) Political Economy

(9) Public Finance

(10) Public Administration

(11) Local and Municipal Institutions

(12) Problems of transport and - - Railways

(13) Co-operative Associations, and organisation of industries

(14) Commercial History - History of Industry and Commerce

(15) One foreign language, either German or French

Some of the subjects under - - commerce will be of interest to officials' and the general public The lectures in those subjects should be open to the public as far as possible

For officials and others who cannot attend during the day, special lectures may be given in the evenings

The course in commerce will be for two years There will be one professor

professor and one instructor for the present The students will be supplied with the necessary reference books from the Library

The minimum standard of - - admission for ~~the~~ regular students - - should be the Intermediate in Arts or other coresponding examination

23 (iv) WORKSHOP PRACTICE AND ~~STUDIES IN~~ LIBRARY

The present public works - - Workshop will be developed and utilised for affording practice to the students of the college A competent - - - - Superintendent will be appointed

LIBRARY - The Library should - - contain books on Civil, Mechanical and Electrical Engineering, Industries and Commerce The Library of the Civil Engineers' Association may be developed and utilised for this purpose

Later on, a Museum may be started in conjunction with the Library

24 As the resources of the State do not admit of the duplication of Institutions, it is proposed to develop and utilise the existing workshop and - - Library so that the expenses of - - - providing new ones may be saved

STAFF

25 STAFF - Similarly, the state - - - cannot afford to have a large staff of professors and teachers It is therefore proposed to have three or four - - - professors with high qualifications and the rest willconsist of Lecturers - - - locally trained

On account of the financial exigencies of the State, it is better to make a commencement with the institution with such staff as funds will - - allow at first We have no option in the matter, either we should have higher training with the aid of inadequate staff or no training at all

26 A Professor for Mechanical and Electrical Engineering, one for - - Textile Engineering, one for Architecture and building and one for commerce, will be needed at once

Some of the Engineer officers stationed in Bangalore may be asked to lecture for a day or two every week in order to save expense

For sometime to come, the latest books and journals on each - - - subject should be provided and the - - students left to acquire knowledge by studying them under the general guidance of the professors and the lecturers

In

In a few subjects, instructi may also be given by means of special lectures either morning or evening, - - so that those who are interested in the development of particular industries for which the state cannot at present afford to provide regular courses - - inthe college, may get ~~the~~ some benefit - - of expert knowledge

27 The cost of staff may be estimated as under -

(1)	4 professors Rs 500-800 average Rs 650 per mensem	Rs 31,200
(2)	4 Lecturers - average Rs 200 each per mensem	9,600
(3)	Experts and Demonstrators	10,000
(4)	Miscellaneous staff	6,000
(5)	Experiments in industries and commerce	10,000
(6)	Workshop	7,500
(7)	Library, museum &c ,	5,000
	Total	Rs 79,300

or say Rs 80,000

The expenses may be - - - reduced by employing Engineers and -- professors of existing colleges to give instruction for a few hours every - - week They may be given some allowance for doing the work The total cost for the next five years should not exceed Rs 75,000

28 The whole of the staff at least for the next five years may be - - - temporary and no member should be - - engaged for more than three years at a time This is necessary for three - - reasons The most important one is that Government will be able to sanction - - proposals speedily without the fear of imposing a permanent burden on the State The establishment ~~can~~ may be reduced after due notice if the finances of the State are found to be unequal to the strain. Secondly, it is not desirable to saddle Government with a large permanent staff, for whom employment will have to be - - found or compensation given, if it becomes necessary to dispense with their services The third reason is that temporary men can be changed till we can get the best - - material for our work A permanent officer may often no doubt have a - - - higher incentive for his work, but he is also likely to lose interest and - - become dissatisfied if he should not - - receive promotions as rapidly as - - members of other branches of the - - Government service

29 The teaching staff will be expected to keep touch with experiments in industries and with the working of all institutions in the province

30 CAPITAL OUTLAY - The college may have to begin work partly in hired buildings

A sum of about 3 lakhs will, for the present, suffice for opening the College After about 5 years ~~or so~~ more, some - - - - additional expenditure on buildings and equipment may be - - - - necessary

3/ WAYS AND MEANS - This institution should be maintained entirely ~~by~~ from State Funds Donations may however be - - - accepted if liberal hearted gentlemen wish to contribute Fees levied from students will, to a certain extent, supplement the State Grant

32 ADMINISTRATIVE CONTROL - The college will be under the direct control or a Principal or Director, who will work under the general guidance of a council consisting of Government officers and non-official gentlemen, the latter - - selected chiefly from among those - - - connected with industries, manufactures or trade The president of the Council may be one of the State Councillors The Chief Engineer or the State Geologist, the Inspector General of Education and the Principal of the College will be the official members

5 - CHAMARAJENDRA TECHNICAL INSTITUTE IN MYSORE

---

33 The proposed Chamarajendra Technical Institute at Mysore, which will be formed by the amalgamation of the - - existing Engineering and Industrial Schools in that City, will consist of thre sections

(i) Elementary Engineering including Architecture

(ii) Technical

(iii) Industries and Crafts

ENGINEERING SECTION

34 Candidates seeking admission into this section must have passed the matriculation or the School Final - - Examination

Instruction will be imparted in

1 Civil Engineering including Architecture(Buildings, Roads Irrigation and Sanitation)

2 Mechanical Engineering

The students will be given a certain amount of training in the - - - workshop, in building construction and in business correspondence and estimating The course will be one of three years

SCHOLARSHIPS

Three scholarships of Rs 7 and two of Rs 6 each at the end of the first year, and two of Rs 10 and two of Rs 9 each at the end of the second year will be awarded to the first two persons on th list of successful candidates in each of the two branches

TECHNICAL SECTION

36 Candidates seeking admission into this section, must have passed the matriculation or the School Final - - - Examination The subjects of study willbe -

1 Drawing
2 Mathematics
3 Elementary Physics
4 Elementary Chemistry
5 One of the following special subjects:-
   a Machine work
   b Weaving and Dyeing
   c Photography including process work
   d Commercial subjects such as, Book-keeping, Business Correspondence, Shorthand and Typewriting and - - - Banking
6 Workshop practice
7 Gymnastics and Drill

The course will be one of three years

37 Intelligent and capable - - students desirous of becoming formen in factories will be given a further course of

of one year in practical work

Four scholarships of Rs 5 each at the end of the first year and four of Rs 7 each at the end of the second year will be given to the first boy in each of the groups

INDUSTRIES AND CRAFTS

38 Sons of artisans and boys of other classes(who are unable to continue their studies and who have no other -- means of earning their livelihood) will be admitted into this section to learn a trade

Instruction will be imparted in any one of the following crafts -

a Cabinet making
b Carpentry
c Carving(Wood and Ivory)
d Basket and Cane work
e Smithy work
f Machine work
g Witters' work
h Foundry work
i Sheet metal work
j Tanning
k Weaving and Dyeing
l Brickwork and Masonry
m Engraving

39 As the School develops some of the following subjects will be selected and added to the course of instruction

a Building construction
b Land surveying

c Plumbing

d Carriage building,

e Painters' Work

f Electrical work

g Motor driving

h Boot making and leather manufacture

i Watch and clock making

j. Typography

k Tailoring

l Pottery

GENERAL SUBJECTS - A knowledge of vernacular, English and Arithmetic up to the Lower Secondary standard

Drawing

Business methods

Modelling(for a few selected pupils)

The course will be one of three to five years and will be in - - accordance with a progressive course of studies divided into 3 to 5 sections to suit the respective courses

SCHOLARSHIPS

41 Boys seeking admission into the first class of this section will pay fees for three months, at the end of which they get the scholarship of the class, if they are regular in attendance and hardworking and if scholarships be available If the boy is an artisan, he will be given scholarship from the date of his admission A student seeking

admission

admission with previous knowledge of the industry will be taken into the standard for which he is fit on payment of a fee for one month He gets the scholarship of the class for which he is fit from the second month ~~as per rates given at the end~~ All students should bind themselves to attend the school continuously for a period of at least three years

41 Pupils of other schools will be given instruction in drawing alone The rates of fees for the different - - - standards will be fixed ~~later on~~ when the institution is started and in working order

There will be evening classes in Drawing and lectures in a few special subjects for artisans working outside

43 Classes for imparting - - - instruction in printing, book-binding &c will be opened in the Government Press in Mysore and Bangalore, and they will be under the control of Mr Yates, - - Superintendent, Government Press A grant will be given thereto

44 Pupils in all sections will be examined and given a diploma at the end of their course by a Board of Examiners appointed by the Mysore Government They can also appear for the Madras Government Technical Examinations

45 The institute will have a workshop equipped with up-to-date - - appliances

appliances Every endeavour should be made to give training of a high order, special attention being given to - - developing in the pupils habits of discipline, neatness and accuracy

The workshop will have two sections, one for practice by pupils of the Engineering and Technical sections and the other by those of the Industrial and Crafts Section

46 It is an axiom that a student is best trained in a factory and it is therefore necessary to have a workshop managed on commercial lines The - - students of the Industries and the Crafts section will not be given a diploma unlessthey attend the commercial workshops for a reasonable period They will have to put in longer hours of work and get wages for a lady work done ~~and will have to put in longer hours of work.~~ - -

47 The control of the institute will be vested in a Superintendent

EXPENDITURE

EXPENDITURE

Superintendent	Rs	500
Four Head Masters		700
12 Lecturers		1,165
34 Instructors		1,335
Menials		200
		3,900
270 Scholarships ranging from Rs 2 to Rs 10		1,086
Materials		600
Tools		300
Contingencies		194
		2,180
Grand Total		6,080 per mensem or 72,960 per annum

DEDUCT -

Probable receipts from fees and sales	18,960	
Net expenditure at present incurred on the Mysore Industrial School	20,000	
Net expenditure at present incurred on the Engineering School	9,000	
		47,960
Net excess expenditure now required per annum		25,000

An

48 An initial outlay of - - -
Rs 25,000 for the commercial workshop
for the purchase of materials and - -
Rs 25,000 for equipment with machines &c ,
will be necessary The total capital - -
expenditure ~~is~~ will be Rs 50,000

6 -IMPROVEMENT OF EXISTING INDUSTRIAL SCHOOLS IN THE STATE.

---

49 With a view to improving the - existing industrial schools in the - - - mofussil, the following proposals are - - made -

There are now six Government - Industrial schools in the Province - - Those at Hassan and Melkote will be - - taken over by Government and one will - - be opened at Chitaldrug There will - - thus be nine mofussil Government Industrial schools in the Province including the three ~~now~~ newly proposed, as detailed below -

Names of places	Industries to be taught
1 Chennapatna	Lacquer work, Carpentry, Musical wire, and Smithy work
2 Chicknayakanhalli	Weaving and carpentry
3 Chitaldrug	Weaving, Carpentry, and Smithy work
4 Dodballapur	Weaving & carpentry
5 Hassan	Carpentry, Cane work, and Smithy work
6 Hole Narsipur	Weaving Carpentry, and Smithy work
7 Melkote	Weaving, Carpentry, and Cane work
8 Molakalmuru	Weaving & carpentry
9 Sagar	Carpentry & smithy work

The

40

50 The subjects of study ~~are~~ will be -

(1) One or more of the industries ~~given~~ mentioned above against the schools,

(2) Drawing,

(3) General education - Reading, Writing, Arithmetic and business methods

The courses of studies will - - be progressive as prescribed by Government The duration of the course will be one of three - years in the case of lacquer work, musical wire, drawing, weaving and cane - - work and of three to five years for - - carpentry and smithy work

51 The details of establishment - are given at the end Industrial - - schools can never be expected to ~~become a success~~ prosper unless they are properly organised and carefully and intelligently supervised It is therefore proposed to ~~have~~ place them in charge of full time Superintendents They must be experierced men possessing the power of organization They must - also have a general knowledge of the - - irdustries taught in the school in - - their charge Such men cannot, under - ordinary circumstances, be secured for a ~~less~~ smaller pay than Rs 100 a month It is - - proposed to start them on Rs 75 per - - month All the Superintendents will - be placed ~~first~~ at first in that grade Those - that do really good work for at least two years will be promoted to the - - higher grades Others that fail to - - produce good results in this period -

will be replaced by passed men from - - technical colleges and by men trained in the College of Technology to be started in Bangalore

Provision is made for giving two instructors in some of the industries where they may have a large number of students

52 Students trained in the - - school must be able to design and - - - give clear sketches of articles they - - undertake to make They must also be able to estimate accurately the value - of the articles they have to prepare - They must know where the various materials required by them can be profitably purchased and where they can sell their - - manufactured articles to advantage - - They must be able to indent in writing - for the materials required for their - - work It is therefore proposed to - - - impart instruction in Drawing and to - - equip the pupils with a certain amount - of general education before they leave - the school

53 SCHOLARSHIPS -- Provision is made for - . 420 scholarships for all the nine - - - schools to be distributed in accordance . with the strength of the schools

Boys seeking admission into the schoolfwill pay a prescribed fee - -

for

for a period of at least three months - - when they may be given the scholarship - of class A, if they are regular in - - attendance and hardworking, ~~that so~~ and, - - if scholarships are available Bona-fide artizans will get scholarships from the date of admission All boys must - bind themselves to attend the school - - continuously for at least three years

As boys of these schools - - have to make a living by the trade - - they learn, they will not be fit for it unless they work for some time on - - - commercial lines It is therefore - - proposed to have ~~a~~ small workshops - - - attached to these schools worked on - - commercial lines Boys will be paid wages for work done and they will - - - have to put in longer hours of work - - They will not be given a diplora - - - unless they practise for two years in - - ~~the~~ a commercial workshop

DETAILS OF EXPENDITURE

54 The following is a rough - -

estimate

estimate of staff, &c , required -

	Rs	
9 Superintendents	900	Maximum cost
41 Instructors	1,045	
18 Teachers and Clerks	405	
Half time teachers	40	
27 Menials	162	
	2,252	
420 scholarships ranging from Re 1-8-0 to Rs 5	1,140	
Materials for boys	700	
Tools	200	
Contingencies	148	
Total per mensem	4,740	
Do per annum		56,880
DEDUCT		
The net cost of the mofussil industrial schools including the grants-in-aid to Melkote, Hassan and Hole Narsipur schools	17,400	
Probable income from sales and fees from the reorganised schools	14,480	31,880
Net additional cost of the nine schools		25,000

An initial provision of - - Rs 9,000 for equipping all the nine - schools with tools, &c , and of - - - Rs 21,000 for purchase of materials - and payment of wages will be necessary

7 - MODELS OF TECHNICAL INSTITUTIONS

A

(1) TECHNICAL SCHOOLS.

55 OBJECT. The object is to prepare students for scientific, mechanical and constructional occupations according to the special requirements of each locality The students will be given an opportunity of obtaining a knowledge of the use of tools and instruments

The course hereunder prescribed is intended as a preparatory scientific and practical training for young men - - intending to follow an industrial career

56 COURSES OF INSTRUCTION

GENERAL

(1) Mathematics

(2) Elements of Physics and Chemistry

(3) Drawing

(4) Engineering Workshop

(5) Carpentry Workshop

SPECIAL SUBJECTS

Training may be given in addition in one or more of the following - - subjects -

115

subjects -

(1) Mechanical Engineering

(2) Building construction including earthwork and roads

(3) Electrical Engineering

(4) Estimating

(5) Land Surveying

(6) Hydraulic Engineering including management of tanks and canals

(7) Mining

(8) Metalware work

57 STAFF AND EQUIPMENT.

(Note The staff provided will probably suffice to give instruction in two or three special - - subjects)

ESTABLISHMENT

Head Master	Rs 250
Drawing Master	75
2 Assistant Masters at Rs 75 each	150
3 Special Assistants at Rs 50 each	150
Workshop Superintendent	100
Foreman, Superintendent or Maistry	50
Office Establishment	75
Total	Rs 850
Per year	10,200
Workshop expenses	700
Repairs to Machinery and buildings	1,000
Total	Rs ~~11,900~~
or say	Rs 12,000

If a new building cannot be - - provided at the outset, a beginning may be made by hiring one. An Engineering and a carpentry workshop may be provided at a cost of about Rs 10,000

58 COST The initial capital cost will vary from Rs 25,000 to Rs 50,000 and the yearly expenditure will be about - - - - Rs 12,000

In cases where economy is - - - important, the cost may be reduced by a proportionate reduction of the subjects and staff The minimum amount required for this class of institutions may be put down at Rs 6,000 per annum

59 Industrial schools will be in greater demand than technical institutions for some time to come, the difference - - between the two being that in the latter there will be more theory and in the - - former more practice Boys trained in - - industrial schools will probably find - - employment more readily than those - - - educated in Technical Schools The latter class of institutions will give a training of more scientific, and therefore of a - - more permanent value

(2) ART TRADE SCHOOLS

60 Object — The object of an Art Trade School is to give instruction in the application of art to industry and in the observance of the principles of grace and harmony in nature to the preparation of objects of trade and daily use The articles manufactured must, it is true, be durable and serviceable But, in art trades, the worker should particularly bear in mind grace of form and harmony of colour and not be merely a mechanical producer of useful wares

61 Subjects to be taught — A selection may be made for giving instruction in one or more of the following subjects -

(1) Wood carving, including sandal wood carving and inlaid work

(2) Furniture design and cabinet making

(3) Decorative painting including interior decoration.

(4) Sculpture including stone carving

(5) Photography

(6) Graphic art.

(7) Gold and Silver smithy

(8) Etching, engraving and lithography

(9) Lace-making and embroidery

Where a complete school cannot be established one or more of the arts can be taught by opening special classes in an existing industrial school or a - - school of general education

62. The capital cost of an art - - trade school may be roughly estimated at Rs 25,000 - - - including buildings and - - equipment The recurring expenditure may amount to Rs 6,000 including materials The cost will however depend on the number of pupils and of subjects selected

Cost

63 The course of instruction for each trade will ordinarily be one of - - three years, of which the first will be a preparatory course In some special subjects, such as gold and silver smithy, students will require longer practice Such - - - practice may be afforded by extending the course by one or more years as required.

64 The subjects taught in the preparatory course will be -

Preparatory course

(1) The elements of Geometry

(2) Arithmentic

(3) English and Kanarese composition

(4) Use of scales, squares and drawing instruments

(5) Geometrical drawing and Geometrical ornamentation.

(6) Free hand and Model drawing

For those who have aptitude, elements of Algebra, Statistics and Book-keeping may also be taught.

During the closing period of the training, particular attention should be given to preparation of designs and - . detailed estimates of cost

6s The standard of admission may be general education corresponding to the Lower Secondary or other equivalent examination But there should be no rigid - - restrictions in this respect Students - trained in trade or craft schools or sons of artizans may also be admitted into the Art Trade Schools

(3) ,

(3) INDUSTRIAL SCHOOLS.

66 These schools are intended to train boys in particular industries that they may after leaving the school follow the ~~trade~~ industry taught and earn a living by it. The work will be mostly ~~all~~ practical and very little of theory will be taught.

67 The subjects of study will be as under -

(1) One of the following trades -

1 Carving
2 Cabinet making
3 Carpentry
4 Carriage building
5. Painter's work
6 Lacquer Work
7 Smithy Work
8 Fitter's Work.
9 Musical Wire making
10. Tin-smith's Work.
11 Metal work (Hammered and cast)
12 Cane and basket Work
13 Weaving.
14. Dyeing
15 Tailoring
16 Boot and shoe making.
17. Book binding
18 Brick work and masonry
19 Land Surveying
20 Rope making

21. Mat weaving

II Drawing

III General Education - Reading, writing, Arithmetic

IV. Business methods

V Modelling

The course of instruction will be one of 3 to 5 years according to the nature of the industry taken up

68 The staff will consist of -

a Superintendent, a Foreman for each of the industries taught in the school, a Drawing Master, and office establishment to the extent needed (including - - teachers for general education)

Each school may take up 2 or 3 industries according to the requirements of the locality and may cost - - - roughly Rs 5,000 a year (Staff, materials tools, &c , included)

69 A school which trains and sends out boys that they may make a living by working at ~~the~~ a trade~~s~~, cannot successfully do so unless it has a workshop - - working on commercial lines attached - - thereto The initial cost of equipping such a workshop with tools, &c , will

vary

vary according to the requirements of the industries selected It may be roughly ~~put down~~ estimated as ranging from Rs 1,000 to Rs 6,000 A fixed provision of about - - Rs 2,000 will be required for materials, &c , for the commercial workshop

70 These industrial schools will ~~be a success~~ succeed only if the people of the locality take an active interest in them, It seems important that new schools ~~are~~ should be started only in places where people come forward with contributions towards the upkeep of the institutions

(3) CRAFT SCHOOL OR LOWER INDUSTRIAL SCHOOL - RURAL

71 These schools are for imparting to the sons of ryots instruction in rural crafts or industries so as to enable them to make and repair their own agricultural tools, implements and other requisites

72 Instruction may be imparted in one or more of the following special - - subjects according to the requirements of each locality -

(i)

(i)

1. Rural carpentry (such as countr carts, agricultural implements such as ploughs, doors, windows &c)

2 Smithy,

3 Basket work,

4 Rope making,

5 Kambli weaving,

6. Weaving (cloths of lower counts),

7 Sericulture and silk reeling,

8 Mat weaving

(ii) Elementary drawing

(iii) General Education in the Vernacular

73 The course will be one of one to three years A small business workshop will be attached to each school where the pupils will be required to - work for a further period of one to two years receiving wages for work done - This will complete the training

74 The school will cost about - - Rs 250 to 600 per annum, according to the number of subjects taught The cost of equipping such a school with tools, &c , will be Rs 100 to Rs 300 An initial allotment of Rs 200 for purchase of materials, &c , will also be necessary

In

75 In places where separate - - - schools cannot be established, it should be sufficient, if special classes in - - local schools are arranged for. The - - annual cost would then be much less

(4) COMMERCIAL SCHOOLS

76 A proper business education for all classes of people in Mysore is an urgent necessity The people are following old time practices in many walks of life which hinders progress and, if - - business principles are applied to daily avocations, unintelligent and wasteful labour will be less used. The importance of co-operative effort and mutual helpfulness should be recognised The production, distribution and uses of merchandise should be better understood The means of utilising Government help and the benefits of organisation ~~will~~ should be brought home to all classes of people

77 Higher commercial education will be necessary as a preparation for business life to young men inheriting large agricultural and industrial properties and also for Government officers and managers of all large concerns

The basis of higher commercial education must be economic science, - commercial history, commercial law and commercial geography The education mus enable the student in after-life to - - handle great affairs in a merchant's or manufacturer's office and he should be able to trace and analyse the profit and loss in every department of a large - - business

78 Provision is made in the curriculum of studies for the College of - - Technology for instruction in Higher - - Commerce No other separate institution is necessary for this purpose.

SECONDARY COMMERCIAL EDUCATION.

This will include -

(1) Commercial Correspondence, Penmanship, Hand-writing, and typewriting

(2) Phonography or Phonetic Shorthand

(3) Business practice and methods

(4) Book Keeping

(5) Estimates of cost

(6) Commercial Arithmetic and Geography and Commercial Law

(7) Office practice and knowledge of wares

(8) Commercial morality

Lower

80 Lower commercial education - - should include a training for the formation of character in the modern sense. The habits of punctuality, diligence and discipline should be specially inculcated The student should be taught to cultivate a sense of honour and to understand his duties and relations to his - - fellow men and the State

The subjects taught should be the three R's, Book-keeping, both - - - Indian and European, correspondence and a knowledge of the resources of the - - country Instruction should be given in the elements of commercial morality

81 COST. Where a complete commercial - - school is not started, only a few - - - selected subjects from the list given above will be taken up

We have provided for commercial classes in the College of Technology and also in the proposed Technical Institute in Mysore A special school of the elementary standard will cost probably - - - Rs 1,200 per annum and that of a - - - secondary standard Rs 3,600 But as - - business training is essential even - - along with general education classes the teaching of commercial subjects should be

be provided in every town and, where - - separate classes are not feasible, at - - least continuation schools or lectures should be arranged for.

82 We attach great importance to the value of a course in Economic Science Statistics and Public Administration for every officer of the Revenue Department.

(6) GIRLS' Industrial SCHOOLS

83 Industrial education for girls is a matter of slow growth in a country where only one female in 144 can read or write and where religious and social restrictions are so many and so rigorous

84 The girls' institutions may be considered under three heads -

(1) Elementary Domestic subjects schools,

(2) Secondary Domestic subjects schools,

(3) Industrial and Craft schools

85 The general education needed by girls in this country is a course - - calculated

calculated to foster in them habits of diligence, order, thrift, cleanliness, - neatness and accuracy

Every girl should be taught - - sewing as is done in Japan

To all classes of girls, - - household economy should be taught, to girls of the higher classes lessons in - ordering, adjusting and managing a house, and to those of the lower classes, elementary lessons in house work, house - - keeping, sewing and cooking

86 COURSES OF STUDY --

(1) ELEMENTARY DOMESTIC SUBJECTS SCHOOLS --

Domestic economy (Elementary lessons in house work and house-keeping)

Sewing,

Cooking,

Laundrying

(2) SECONDARY DOMESTIC SUBJECTS SCHOOLS

Reading, writing & arithmetic

Instruction in household economics (housework & management of the house)

Hygiene,

Home medicines, nursing & midwifery

SPECIAL SUBJECTS -

Music

Freehand Drawing

(3) INDUSTRIAL SCHOOLS FOR GIRLS -

The curricula will have to be specially prepared where a high class industrial school is needed Such a - - school will sooner or later be necessary in places like Bangalore and Mysore

The girls should have gone - - through one or the other of the Domestic subjects schools before preparing themselves for any special industry or art - trade.

The main object should be to teach the girls of the poorer classes some sort of industry so as to enable - - them to gain their livelihood after they have finished their scholastic career

The trades in which instruction may be given are -

Embroidery,

Lace making,

Knitting,

Millinery,

Photography,

Upholstery,

Dairying,
Breadmaking,
Making Preserves

Along with each subject, - - instruction should be given in drawing, designing and estimating

87 Each class of school may be - - started with at least two teachers at the commencement The - - Elementary School may cost about Rs 600 per annum, the Secondary School Rs 1,500 per annum and a Girls' Industrial - - - School about Rs 3,000. The expenditure will increase with the number of subjects and of pupils requiring instruction

Cost and staff

88 In villages, the girls may be given instruction in cooking, house - - management, field work, care of domestic animals and also in special trades like matting, basket work, rope making, - - bamboo and cane work

Wherever a regular Domestic Subjects School for girls cannot be - - established for want of funds, classes - for teaching special subjects may be - - attached to an existing girls' school

In

In the last resort, morning classes or lectures may be arranged for.

B - SPECIAL CLASSES, CONTINUATION SCHOOLS OR CLASSES, AND LECTURES.

---

89 A detailed description of each of the suggested types of smaller technical and industrial schools having been given, it is proposed in this section to suggest other forms of provision for technical education suited to places which from poverty of resource or want of facilities are unable to adopt one of the suggested type in all its completeness The alternatives suggested are (a) Special classes, (b) Continuation Schools or classes, and (c) Lectures

90 (a) SPECIAL CLASSES -

Where suitable accommodation is available either in the local school or in close proximity to it, special classes for instruction in any of the courses suggested for model schools may be held during the usual working hours of a school These classes may be in charge of a teacher specially appointed for the purpose but under the general management of the head master of the

local

local school. The cost of maintaining a single class of 30 pupils may vary from Rs 150 to Rs 400 a year according the course selected and qualifications the teacher.

91 (b) CONTINUATION SCHOOLS OR CLASSES

Where separate accommodation is not available for special classes, morning or evening classes for instruction in selected subjects may be held in existing school buildings These classes may be conducted by local teachers who have obtained technical training or until trained teachers become available by skilled artizans under the guidance of a teacher of the local school The classes may be held for two hours twice or thrice a week The minimum remuneration for each day's work may be 8 annas in the case of a teacher of an Elementary or Middle School and Rs 1 in the case of a High School Teacher These classes will be open not only to regular students but also to all others who wish to attend them

92 (c) LECTURES -

Organised courses of lectures on subjects suggested for model schools may be delivered in selected places

by competent local teachers or itinerant lecturers specially appointed for the - - purpose The aim of instruction should - be to give the pupils information on - - points likely to be exceedingly useful to them and by a description of the material, tools, &c., employed in the industry to stimulate interest in their calling

The salary of a whole time - - lecturer when one is appointed for the purpose may according to his qualifications be from Rs 50 to Rs 100 In the case of competent local teachers undertaking the work the minimum monthly - - allowance shall be Rs 20.

SCHOLARSHIPS AND FOREIGN TRAINING -

Scholarships given in India outside the State

---

93 The scholarships offered by Government to Mysore students - - - wishingto prosecute their studies - - in specified subjects in colleges outside the State are the following -

Ten scholarships of the value of Rs 15 to Rs 20 each tenable for three years in one of the technical or commercial colleges, or Schools of Arts in Bombay Madras or Calcutta

Three of the value of Rs 30 a month tenable for three years in an Engineering College.

Two of Rs.25 each tenable for four or five years in the - - - Madras or Bombay Medical - - - College

Two of Rs 10 to Rs 15 tenable for three years in a College of Agriculture.

The maximum yearly grant - - - required for these scholarships isRs 14,790 The actual budget allotment for the year 1911-12 isRs 14,559

94 There are during the current year 17 students holding medical - - scholarships

scholarships in Bombay or Madras, 10 holding engineering scholarships in the Engineering College at Madras, 2 holding agricultural schlarships in Coimbatore, 29 holding technical scholarships in Bombay, Madras, or - - - Calcutta, and 2 holding scholarships in the Teachers' College, Madras. The actual amount paid to these students per month amounts to Rs.1,340, or per annum to Rs.16,080, of which a sum of Rs 9,420 is to be met from - - State Funds and Rs.6,660 from Local Funds General.

9. Besides these Professional and Technical Scholarships, scholarships for general education are - - awarded to 6 students studyirgin the Mohammedan Anglo-Oriental College at Aligarah, and to 4 students studying for the B A. Honours Course in Madras The total amount spent on these - - scholarships is Rs 3,000.

Thus the scholarships held by students prosecuting their studies in Indian Colleges outside the State duringthecurrent year will amount to Rs 19,080

The provision seems to be adequate andthe scholarships are - - fairly well distributed

SCHOLARSHIPS HELD IN FOREIGN COUNTRIES

---

96 STATE FUND SCHOLARSHIPS -

Until now only two - - - scholarships appear to have been - granted from State Funds, one for Law, and the other for Medicine

97 DAMODAR DASS CHARITIES FUND SCHOLARSHIPS

Rules for the grantof - - scholarships for Scientific Research and Technical Education from the - - Damodar Dass Charities Fund were - - first issued in May 1906 Ordinarily two scholarships of £200 each are - - granted every year, andeach scholarship is tenable for two years or - - such other period as may be fixed by the Mysore Government, having regard to thesubject selected for study or Research The scholarships are - - granted to students selecting one or more of the following subjects -

1 Chemistry

11. Physics

111 Applications of Chemistry or Physics to Agriculture or the various arts and - - - industries

1V Medical Research, in any - - branch, including Hygiene, and Bacteriology

V Mechanical Engineering

V1 Mining and Metallurgy, including Electro-Metallurgy

V11 Electrical Engineering

In special cases these scholarships are granted also for the encouragement of higher studies in Sciences other than those specified above

The following table shows the subjects for which these scholarships are held during the current year

Subject	Place of study	No of Scholar ships	Amount
Medicine	England	2	Rs 6,000
Science	England	1	3,750
Electrical Standardising	England	1	3,000
Electrical Engineering.	America	1	3,000
Engineering with special reference to Architecture	London	1	3,000
Forestry	Oxford	1	4,500
Agriculture	England	1	3,645
Agricultural chemistry	Germany	1	3,000
Law(paid from State Funds)		1	3,750.
			33,645
	Omitting scholarships given for Medicine, Science, Forestry and Law		18,000
	Scholarships for purely technical subjects		15,645

ADDITIONAL

98 ADDITIONAL SCHOLARSHIPS PROPOSED BY THE COMMITTEE

The Committee feel that the necessity for making adequate provision for the training of young men sent to Europe in industrial subjects has not received sufficient attention, and they, therefore, feel it necessary to urge that during the next few years two scholarships of £300 each be granted annually from the State Funds to students offering to study any one of the following subjects

1 Chemical Industries

2. Textile Industry (including dyeing and bleaching)

3 Tanning and the manufacture of leather goods

4 Iron and steel work

5. Wrought metal industry

6 Machine construction

7 Electrical Industries

8 Ceramics and glass manufacture

9 Manufacture of candles, greases, and industrial oils

10 Paper and cardboard manufacture

It is to be understood that the selected students are expected to study principally the practical and commercial details and information so that they may be of service to them in starting the selected industry on their return to the State The student selected should undergo a preliminary

training in an Indian institutio...
before leaving for Europe &c ,

99 TRAVELLING PROFESSORS OR COMMISSIONERS

The Committee attach great importance to the necessity of the State being in touch with the latest developments in arts and industries in other parts of the world and with this view we recommend that two local officers should be constantly placed on deputation in foreign - countries each for a period of no less than six months at a time This arrangement would cost the State - - annually about Rs 30,000 for - - salaries, passage money, and - - - allowances

100 If the proposals of the - - Committee are accepted, the annual expenditure on account of technical scholarships and foreign training would stand thus -

Subjects

Subjects	Period years	No.	Monthly rate Rs	Max yearly amount
SCHOLARSHIPS PAID IN INDIA				
Technical	3	10	15 or 20	7,200
Engineering (when necessary)	3	3	30	2,240
Agricultural (when necessary)	3	3	10,12½,15	1,350
DAMODAR DASS CHARITY FUND SCHOLARSHIPS -				
Subjects specified in the rules	2 or 3	2	£200	18,000
ADDITIONAL SCHOLARSHIPS PROPOSED BY THE COMMITTEE				
Industrial Subjects	3	2	£300	27,000
TRAVELLING PROFESSORS OR COMMISSIONERS				
Arts and Industries	Not less than 6 months	2		30,000
			Grand Total	86,790

The estimated expenditure on scholarships in India and on - - Technical Scholarships in foreign - - countries will amount to Rs 11,790 and Rs 18,000, respectively, and - - these sums will be met from the - - present grants from the funds - - - concerned

The

60

The extra expenditure required for the additional ecl'ric l scholarships and for the travelling commissioners proposed will together amount to Rs 57,000 for which provision has been made in the new - - scheme(Vide Apperdix III)

9, PROPOSALS FOR GRADUAL DEVELOPMENT

---

101 Our scheme in effect provides for starting one large institution in Bangalore, one in Mysore and also for improvemnts in the equipment and teaching of the existing industrial schools in the Province.

Beyond this, it merely makes provision for an annual lump sum grant of Rs 93,000 to be given as subsidies and - - grants-in-aid to those willing to start similar institutions in other parts of the Province

102 We have given some particulars of model institutions to enable ~~the~~ a - - - selection to be easily made We attach - - special importance to the adoption of - - measures whereby every town or village requiring education in any particular subject shall have an opportunity of making a start with the minimum of outlay - - - necessary for such a purpose

103 The total additional expenditure proposed for buildings, equipment &c , is Rs 5 lakhs in the first three years and

the

the annual expenditure proposed is Rs 3 lakhs. This is exclusive of the amount already spent on Industrial Education in the State, as explained above. After three years both the capital and recurring - - outlay will have to be increased if it is found that satisfactory progress is made in the meanwhile

104 The entire scheme as explained already will be treated as temporary. No permanent pensionable appointments will be made until Government are satisfied with the importance of the new movement.

10 —

10 - ADMINISTRATIVE CONTROI AND ESTIMATF OF COST

105 At present the control of - - Industrial education in the State is - - vested in the Inspector-General of Education In future a special officer will have to be appointed for the purpose on a salary of about Rs 1,000 He will work either as an Assistant to the Inspector General of Education or to the Dir ctor of Industries if one is appointed or if Government see fit, he may be treated as the head of an independent Department No officer should be in charge of the Department for more than three years at a time unless he has special aptitude for the work as evidenced by the results - - achieved

106 There should be at least one Inspector for the supervision of schools and for helping local authorities in - - starting new schools This officer should also be liable to be changed once in two or three years unless re-appointed

107 The approximate cost of - - - Direction charges Direction will be as under -

(1)

	Per annum
(1) Director at Rs 1,000 per month	Rs 12,000
(2) Inspector at Rs 300-Rs 500	4,800
(3) Office establishment at Rs 400 per mensem	4,800
(4) Travelling allowances and all miscellaneous expenditure	3,000
Total	Rs 24,600
or say	Rs 25,000

108 Every Technical Institution - - should have a Committee of management with which the leading private gentlemen engaged in trade, industry or education should be associated This is the - - - principle on which all technical schools are managed in European countries The - head of the school and the local officers of the education and technical Departments of Government should also form - - members of the Committee

109 An abstract estimate of cost of the proposed - - developments is - - given in Appendix iii.

Total cost

The main heads of expenditure are as - - under -

under -

(1) College of Technology in Bangalore	Rs	75,000
(2) Chamarajendra Technical Institute in Mysore (additional expenditure only)	Rs	25,000
(3) Improving existing Industrial schools (Additional expenditure)	Rs	25,000
(4) Subsidies or grants-in-aid to help local bodies or associations to start technical institutions		93,000
(5) Scholarships and foreign Training (Additional expenditure)	Rs	57,000
(6) Direction and Control	Rs	25,000
Total	Rs	3, 00,000

The capital outlay (vide - -- Appendix iii) will be Rs 5 lakhs to be expended in the first three years The Committee consider that time should not be lost in starting the institutions - - required till new buildings are constructed for them ~~The~~ Work may be allowed to be begun in hired premises to enable the people to make an early start

11 --CONCLUSION SUMMARY OF RECOMMENDATIONS

--

110 There are commercial and technical colleges on the Continent of - - Europe which are maintained mainly ~~by~~ from - private contributions and ~~by~~ from fees paid by students In many of the individual States in North America, technical - - - education is given free In Mysore, we have to provide for ~~our~~ The requirements of the State - - within the limits of ~~our~~ its resources and - encourage private effort and contributions as far as possible Expensive - - arrangements, whether for buildings or for professors, at this stage, should - be severely discouraged if the institutions are not to prove a burden and get into disfavour both with the authorities and the public

111 No apology is needed for - - suggesting a scheme of technical education as indicated in this report Education on these lines is, in our opinion, overdue in this country

So long ago as 1888, H.E. the - - Viceroy in Council emphasised "the - - need for scientific methods to develop the material resources of India

so that Indians may better - - hold their place in the markets of the

world where competition is carried on - - with an intensity of purpose which has been compared to the conditions of warfare"

In a Council speech in 1906, t the late Viceroy, Lord Minto, said "Technical instruction in other countries is growing apace The success of modern industries and the preservation of indigenous industries is every - day becoming more and more dependent on scientific and technical knowledge and - if the resources of India are to be developed, such development must depend - - largely upon local enterprise and upon recognition of the absolute necessity - of expert training" Mr Montagu, the - Under Secretary of State for India, - - spoke in the same strain in introducing the Indian Budget in Parliament this - - year

112 Foreign countries are spending colossal sums on technical education - The Charlottenburg Technical High School ~~at Berlin~~ one High School in Berlin - is maintained at an annual - - outlay of Rs 10½ lakhs The more recently started Manchester Institute in - England costs Rs 6 lakhs per annum - - They spent Rs 75 lakhs in order to - - bring the former institution into - - existence and Rs 45 lakhs on the latter Japan has also started large institution

and

and is besides maintaining students in all the leading Technical Universities of Europe and America

No one can question the - - necessity or importance of the proposals we have put forward The expenditure - - we have recommended, small though it is, will enable Government to make a modest beginning

113 Our recommendations may be summarised as follows -

(1) That Government do incur a capital expenditure of at least Rs 5 - - lakhs for buildings and equipment, and an additional recurring expenditure of 3½ lakhs per annum for developing industrial and - - technical institutions in the State

(2) That a Director with a capacity for organising such institutions be appointed on such salary as he can be had

(3) That an advisory Board be appointed consisting of three Government officers and two private - - gentlemen to guide the operations of the Department

(3) That the Scheme of technical education as laid down above be introduced and developed under the advice of the Committee of Education and Industries and Commerce of the Mysore Economic Conference

(4)

(4) That arrangem nts be made for start ing the College of Technology in Bangalore, ~~the~~ work being begun in hired premises till proper - buildings and equipment are provided

(5) That arrangements be made for - - starting the Chamarajendra - - - Technical Institute in Mysore - - from the commencement of 1912-13

(6) That every town and important - - village desirous of starting any of the technical institutions, as per models given above, be assisted by the Director in starting - and maintaining such institutions on r ceipt of an application from the District Boards, Municipalities or Associations or Guilds of private citizens, through the head of the District

(7) That, since any permanent development of industrial education in the Districts, will depend on the extent to which voluntary effort on the part of the people is - - - enlisted, every application for an institution or class should be - - accompanied by an offer to meet - one-half or other percentage of the entire cost of ~~each~~ such institution or class, as Government may

fix in each case

(8) That the entire scheme be tentative for a period of 3 years, which - - may be extended to 5 The scheme may be revised and reconsidered at the end of ~~the prescribed~~ five years - - ~~period.~~

to half the mysore students to prosecute their studies in technical and commercial subjects in England and other foreign countries or in

(9) That scholarships be given ~~for - foreign training and training in~~ Indian Colleges outside Mysore to the extent recommended

(10) That two officers be constantly placed on deputation in Europe America and Japan to keep touch with the most modern systems of industrial and technical education and progress in industries and commerce.

Appendix 1

Proceedings of the Government of His Highness the Maharaja of Mysore Local Fund and Sanitary(Education), dated 28th October 1910, appointing the Committee

No 3585-9/Edn 462-09-2 Dated Bangalore, 28th October 1910

ORDER - The Government consider that the subject of improving the Industrial Schools in the State should engage early attention and that it is essential that a definite policy and plan of work should be adopted so as to secure the best possible results in this impor ant branch of education They are accordingly pleased to appoint a - - Committee consisting of the undermentioned gentlemen for considering the subject and submitting their proposals -

(1) Mr M Visvesvaraya, Chief Engineer(President)

(2) Mr J Weir, Inspector-General of Education in Mysore

(3) Mr V Rungaswamiengar, Executive Engineer

(4) Mr C Krishna Rao, Head Master, Government High School, Bangalore

(5) Mr G. Subbasvamy Iyer, Superintendent, Industrial School, Mysore

2 The Committee is requested to go into a consideration of the subject in all its aspects and submit a full and detailed report, within six months, indicating among other things, how the Industrial Schools should be conducted according to a comprehensive programme and what defined courses of training should be systematically followed

3 The Inspector-General of Education will furnish the - - Committee with all information hat may be required about the working of the existing Industrial Schools and other necessary particulars connected with them

Appendix (II)

Statement showing the particulars of Schools in the Mysore State for

Names of Schools	Subjects taught	Number on rolls on 30th June 1911	Machinery and Tools		
Government Schools					
Industrial School, Mysore	(1) Cabinet making (2) Carpentry (3) Smithy (4) Fitters (5) Cane & basket works (6) File making (7) Pottery (8) Free hand outline drawing (9) Geometrical drawing (10) Painting (11) Design modelling (12) General Education to industrial boys	208	1505		3
Weaving School, Dodballapur	(1) Weaving and (2) Carpentry	51	100		
do Chicknaikanhalli	do do	24	100		
do Melkalmuru	(1) Weaving, (2) Carpentry & (3) drawing	24	100		
Industrial School, Channapatna	(1) Lacquer work (2) Musical were making (3) Nature imitation and (4) Smithy, (5) Carpentry and general Education	63	100		
do do Sagar	(1) Carpentry and (2) Smithy	13	100		
do do Holenarsipur	Carpentry	35	100		
	Total	415	2105		3
Aided Schools					
Mission Industrial School, Tumkur	(1) Carpentry (2) Smithy & (3) Rattan work	61			
do do Kolar	(1) Carpentry, (2) Smithy (3) measuring (4) Iting and (5) Agriculture	118			
St Joseph's School, Mysore	(1) Carpentry, (2) drawing (3) Gardening and (4) Music	8			
Weaving Institute, Holenarsipur	(1) Weaving, and (2) Dyeing	43			
Industrial School, Hassan	Carpentry	25			
do do Melkote	(1) Carpentry, (2) Rattan (3) weaving and (4) Tailoring	69			
do do Bagepalli	(1) Carpentry and (2) Tin work	20			
do do Gowribidnur	Carpentry	31			
do do Premavasipur	(1) Carpentry and (2) Mat making	22			
Dodanna's Industrial School, Bangalore	(1) Rattan work, (2) Drawing, (3) Clay modelling	253			
		650			

Cost of Establishment			Scholarships			Contingencies			Total			Remarks
1 774	2	7	7 371	2	1	226	14	2	20,877	3	1	
1,222	12	3	642			190			2174	12	3	
1 053	11	10	600			204			1957	11	10	
1 300			694			207			2 201			
1,462			480			177			222	2	2	
1 008			360			99			1 567			
742			300			120			1 262			
18 595	10	10	10,347	2	1	1 213	14	2	32 261	11	4	
									Amount of Aid from Government			
									2 196			
									1 200			
									240			
									1 020			
									1 200			
									1 200			
									131	13		
									136			
									136			
									1 200			
									8 209	13		

APPENDIX III

Abstract Estimate of Cost of Proposed Developments

List of institutions	Capital cost	Annual recurring expenditure
	Rs	Rs
1 College of Technology in Bangalore	3 00 000	75 000
2 Chamarajendra Technical Institute in Mysore (additional expenditure *vide* para 48 of report)	50 000	25 000
3 Improvement of existing Industrial Schools (additional expenditure *vide* para 54 of report)	30 000	25 000
4 Subsidies and Grants in aid of— (1) Technical schools classes or lectures (2) Art trade do (3) Industrial and craft schools continuation classes or lectures (4) Commercial classes or lectures (5) Girls do and the establishment of Government model institutions of the same class where needed	1 00 000	93 000
5 Scholarships and foreign training (additional expenditure *vide* para 100 of report)		57 000
6 Direction and control		25 000
Total	4 80 000 or say 5 00 000	3 00 000

APPENDIX II

Statement showing particulars of Government and Aided Industrial Schools in the Mysore State for the year 1910 11

Names of schools	Subjects taught	Number on rolls on 30th June 1911	Machinery and tools	Cost of establishment	Scholarships	Contingencies	Total	Remarks
Government Schools—			Rs a p	Rs a p	Rs a p	Rs a p	Rs a p	
Industrial School Mysore	(1) Cabinet making (2) Carpentry (3) Smithy (4) Fitters (5) Cane and basket work (6) Tile making (7) Pottery (8) Free hand outline drawing (9) Geometrical drawing (10) Painting (11) Designing modelling and (12) General Education	208	1 505 0 3	11 774 2 7	7 371 2 1	229 14 2	20 877 3 1	
Weaving School Dodballapur	(1) Weaving and (2) Carpentry	1	100 0 0	1 222 12 5	642 0 0	180 0 0	2 174 12	
Do Chinnayakanhalli	Do	24	100 0 0	1 003 11 10	600 0 0	204 0 0	1 9 7 11 10	
Do Molakalmuru	Do and (3) Drawing	21	100 0 0	1 300 0 0	94 0 0	207 0 0	2 201 0 0	
Industrial School Channapatna	(1) Lacquer work (2) Mural wire making (3) Natural imitation art (4) Smithy ( ) Carpentry and general education	6	100 0 0	1 46 0 0	480 0 0	177 0 0	2 222 0 0	
Do Sira	(1) Carpentry and (2) Smithy	13	100 0 0	1 008 0 0	360 0 0	99 0 0	1 67 0 0	
Do Hole Narsipur	Carpentry	35	100 0 0	742 0 0	300 0 0	120 0 0	1 262 0 0	
	Total	415	2 105 0 3	18 595 10 10	10 347 2 1	1 213 14 2	32 261 11 4	

Names of schools	Subjects taught	Number on rolls on 30th June 1911	Amount paid from Government	Total	Remarks
Aided Schools—			Rs a p	Rs a p	
Mission Industrial School Tumkur	(1) Carpentry (2) Smithy and (3) Rattan work	61	2 186 0 0	2 186 0 0	
Do Kola	(1) Carpentry (2) Smithy (3) Masonry (4) Fitting and ( ) Agriculture	118	1 200 0 0	1 200 0 0	
St Joseph's School Mysore	(1) Carpentry (2) Drawing (3) Gardening and (4) Music	8	240 0 0	240 0 0	
Weaving Institute Hole Narsipur	(1) Weaving and (2) Dyeing	43	1 020 0 0	1 020 0 0	
Industrial School Hassan	Carpentry	2	1 200 0 0	1 200 0 0	
Do Melkote	(1) Carpentry (2) Rattan work (3) Weaving and (4) Tailoring	69	1 200 0 0	1 200 0 0	
Do Bangalore	(1) Carpentry and (2) Tailor work	20	1 1 1 0	1 1 15 0	
Do Gobichettipalayam	Carpentry	31	1 6 0 0	156 0 0	
Do Sravanapur	(1) Carpentry and (2) Matmaking	22	156 0 0	156 0 0	
Doddannas Industrial School Bangalore	(1) Rattan work (2) Drawing (3) Clay modelling	253	1 200 0 0	1 200 0 0	
	Total	600	8 709 15 0	8 709 1 0	

APPENDIX I

Proceedings of the Government of His Highness the Maharaja of Mysore Local Fund and Sanitary (Education) dated 28th October 1910 appointing the Committee

No 3580 9—FDN 462 09 2 DATED BANGALORE 28TH OCTOBER 1910

ORDER —The Government consider that the subject of improving the Industrial Schools in the State should engage early attention and that it is essential that a definite policy and plan of work should be adopted so as to secure the best possible results in this important branch of education They are accordingly pleased to appoint a Committee consisting of the undermentioned gentlemen for considering the subject and submitting their proposals —

(1) Mr M Visvesvaraya Chief Engineer (President)

(2) J Weir Inspector General of Education in Mysore

(3) V Rangaswamiengar Executive Engineer

(4) C Krishna Rao Headmaster Government High School Bangalore

(5) G Subbaswami Iyer Superintendent Industrial School Mysore

2 The Committee is requested to go into a consideration of the subject in all its aspects and submit a full and detailed report within six months indicating among other things how the Industrial Schools should be conducted according to a comprehensive programme and what defined courses of training should be systematically followed

3 The Inepector General of Education will furnish the Committee with all information that may be required about the working of the existing Industrial Schools and other necessary particulars connected with them

109

(4) That arrangements be made for starting (at once one or two classes to form the nucleus of a future) College of Technology in Bangalore, work being begun in hired premises till proper buildings and equipment are provided Facilities for workshop and laboratory practice should be arranged for new

(5) That arrangements be made for starting the Chamarajendra Technical Institute in Mysore from the commencement of 1913 14

(6) That every town and important village, desirous of starting any of the technical institutions as per models given above, be assisted by the Director in starting and maintaining such institutions on receipt of an application from the District Boards, Municipalities or Associations or Guilds of private citizens through the head of the district

(7) That, since any permanent development of industrial education in the districts will depend on the extent to which voluntary effort on the part of the people is enlisted, every application for an institution or class should be accompanied by an offer to meet one half or other percentage of the entire cost of such institution or class, as Government may fix in each case (A few model institutions of the same class may be started entirely at Government expense) new

(8) That the entire scheme be tentative for a period of three years, which may be extended to five The scheme may be revised and reconsidered at the end of five years

(9) That scholarships be given to help the Mysore students to prosecute their studies in technical and commercial subjects in England and other foreign countries or Indian Colleges outside Mysore to the extent recommended

(10) That two officers be constantly placed on deputation in Europe, America and Japan to keep touch not only with the most modern systems of industrial and technical education but also with progress in industries and commerce

BANGALORE
10th September 1912

M VISVESVARAYA
V RANGASWAMY IYENGAR
C KRISHNA RAU
G SUBBASWAMY IYER

XI Conclusion summary of recommendations

110 There are commercial and technical colleges on the Continent of Europe which are maintained mainly from private contributions and from fees paid by students In many of the individual States in North America technical education is given free In Mysore we have to provide for the requirements of the State within the limits of its resources and encourage private effort and contributions as far as possible Expensive arrangements whether for buildings or for professors at this stage should be severely discouraged if the institutions are not to prove a burden and get into disfavour both with the authorities and with the public

111 No apology is needed for suggesting a scheme of technical education as indicated in this report Education on these lines is in our opinion overdue in this country

So long ago as 1888 His Excellency the Viceroy in Council emphasised the need for scientific methods to develop the material resources of India so that Indians may better hold their place in the markets of the world where competition is carried on with an intensity of purpose which has been compared to the conditions of warfare

In a Council speech in 1906 the late Viceroy Lord Minto said Technical instruction in other countries is growing apace * * The success of modern industries and the preservation of indigenous industries is every day becoming more and more dependent on scientific and technical knowledge and if the resources of India are to be developed such development must depend largely upon local enterprise and upon recognition of the absolute necessity of expert training Mr Montagu the Under Secretary of State for India spoke in the same strain in introducing the Indian Budget in Parliament last year

112 Foreign countries are spending colossal sums on technical education One High School in Berlin the Charlottenburg Technical High School is maintained at an annual outlay of Rs 10½ lakhs The more recently started Manchester Institute in England costs Rs 6 lakhs per annum They spent Rs 75 lakhs in order to bring the former institution into existence and Rs 45 lakhs on the latter Japan has also started large institutions and is besides maintaining students in all the leading Technical Universities of Europe and America

No one can question the necessity or importance of the proposals we have put forward The expenditure we have recommended small though it is will enable Government to make a modest beginning

113 Our recommendations may be summarized as follows —

(1) That Government do incur a capital expenditure of at least Rs 5 lakhs for buildings and equipment and an additional recurring expenditure of 3 lakhs per annum for developing industrial and technical institutions in the State

(2) That a Director with a capacity for organising such institutions be appointed on such salary as he may be had for

(3) That the scheme of technical education as laid down above be introduced and developed under the advice of the Committees for Education and for Industries and Commerce of the Mysore Economic Conference

X ADMINISTRATIVE CONTROL AND ESTIMATE OF COST

105 At present the control of industrial education in the State is vested in the Inspector General of Education In future, a special officer will have to be appointed for the purpose on a salary of about Rs 1,000 He will work either as an Assistant to the Inspector General of Education or the Director of Industries if one is appointed, or if Government see fit, he may be treated as the head of an independent department No officer should be in charge of the department for more than three years at a time unless he has special aptitude for the work as evidenced by the results achieved

106 There should be at least one Inspector for the supervision of schools and for helping local authorities in starting new schools This officer should also be liable to be changed once in two or three years unless re appointed

107 The approximate cost of direction will be as under —

Direction Charges	*Per annum*
	Rs
(1) Director at Rs 1 000 per month	12 000
(2) Inspector at Rs 300—500	4 800
(3) Office establishment at Rs 400 per mensen	4 800
(4) Travelling allowances and all miscellaneous expenditure	3 000
Total	24 600
or say	25 000

108 Every technical institution should have a Committee of management with which the leading private gentlemen engaged in trade, industry or education should be associated This is the principle on which all technical schools are managed in European countries The head of the school and the local officers of the education and technical Departments of Government should also form members of the Committee

109 An abstract estimate of cost of the proposed developments is given in Appendix III The main heads of expenditure are as under —

Total cost

	Rs
(1) College of Technology in Bangalore	75 000
(2) Chamarajendra Technical Institute in Mysore (Additional expenditure only)	25 000
(3) Improving existing industrial Schools (Additional expenditure)	25 000
(4) Subsidies or grants in aid to help local bodies or associations to start technical institutions including the establishment of Government model institutions	93 000
(5) Scholarships and foreign training (Additional expenditure)	57 000
(6) Direction and control	25 000
Total	3 00 000

The capital outlay (*vide* Appendix III) will be Rs 5 lakhs to be expended in the first three years The Committee consider that time should not be lost in starting the institutions required till new buildings are constructed for them Work may be allowed to be begun in hired premises to enable the people to make an early start

100 If the proposals of the Committee are accepted the annual expenditure on account of technical scholarships and foreign training would stand thus —

Subjects	Period	No	Monthly rate	Maximum yearly amount
Scholarships paid in India—	Years		Rs	Rs
Technical	3	10	15 or 20	7 200
Engineering (when necessary)	3	3	30	3 240
Damodar Dass Charity Fund Scholarships—				
Subjects specified in the rules	2 or 3	2	250	18 000
Additional Scholarships proposed by the Committee —				
Industrial subjects	3	2	375	27 000
Travelling professors or Commissioners—				
Arts and Industries	Not less than 6 months	2		30 000
Grand Total				85 440

The estimated expenditure on scholarships in India and on technical scholarships in foreign countries will amount to Rs 10 440 and Rs 18 000 respectively and these sums may be met from the present grants from the funds concerned

The extra expenditure required for the additional technical scholarships and for the travelling commissioners proposed will together amount to Rs 57 000 for which provision has been made in the new scheme (*vide* Appendix III)

IX PROPOSALS FOR GRADUAL DEVELOPMENT

101 Our scheme in effect provides for starting one large institution in Bangalore one in Mysore and also for improvement in the equipment and teaching of the existing industrial schools in the State

Beyond this it merely makes provision for an annual lump sum grant of Rs 93 000 to be given as subsidies and grants in aid to those willing to start similar institutions in other parts of the State (or for establishing model Government Schools)

102 We have given some particulars of model institutions to enable a selection to be easily made We attach special importance to the adoption of measures whereby every town or village requiring education in any particular subject shall have an opportunity of making a start with the minimum of outlay necessary for such a purpose

103 The total additional expenditure proposed for buildings equipment etc is Rs 5 lakhs in the first three years and the annual expenditure proposed is Rs 3 lakhs This is exclusive of the amount already spent on industrial education in the State as explained above After three years both the capital and recurring outlay will have to be increased if it is found that satisfactory progress is made in the meanwhile

104 The entire scheme as explained already should be treated as tentative No permanent pensionable appointments need be made until Government are satisfied with (the successful working of the new movement in the earlier stage)

In special cases these scholarships are granted also for the encouragement of higher studies in Sciences other than those specified above

The following table shows the subjects for which these scholarships were held during the past year —

Subject	Place of study	Number of scholarships	Amount
			Rs
Medicine	England	2	6 000
Science	Do	1	3 750
Electrical standardising	Do	1	3 000
Electrical engineering	America	1	3 000
Engineering with special reference to architecture	London	1	3 000
Forestry	Oxford	1	4 500
Agriculture	England	1	3 645
Agricultural chemistry	Germany	1	3 000
Law (paid from State Funds)		1	3 750
			33 645
Omitting scholarships given for medicine science forestry and law			18 000
Scholarships for purely technical subjects			15 645

Additional Scholarships proposed by the Committee

98 The Committee feel that the necessity for making adequate provision for the training of young men sent to Europe in industrial subjects has not received sufficient attention, and they therefore, feel it necessary to urge that during the next few years two scholarships of £300 each be granted annually from the State Funds, to students offering to study any one of the following subjects —

1 Chemical industries
2 Textile industry (including dyeing and bleaching)
3 Tanning and the manufacture of leather goods
4 Iron and steel work
5 Wrought metal industry
6 Machine construction
7 Electrical industries
8 Ceramics and glass manufacture
9 Manufacture of candles greases and industrial oils
10 Paper and cardboard manufacture

It is to be understood that the selected students are expected to study principally the practical and commercial details and information that may be of service to them in starting the industry in which they have qualified themselves on their return to the State The students selected should undergo a preliminary training in an Indian institution before leaving for Europe or other countries

Travelling Professors or Commissioners

99 The Committee attach great importance to the necessity of the State being in touch with the latest developments in arts and industries in other parts of the world, and with this view they recommend that two local officers should be constantly placed on deputation in foreign countries each for a period of not less than six months at a time This arrangement would cost the State annually about Rs 30 000 for salaries, passage money, and allowances

competent local teachers undertaking the work the minimum monthly allowance should be Rs 20

VIII SCHOLARSHIPS AND FOREIGN TRAINING

Scholarships given in India outside the State

93 The scholarships offered by Government to Mysore students wishing to prosecute their studies in specified subjects in Colleges outside the State are the following —

- Two scholarships of the value of Rs 15 to 20 each tenable for three years in one of the technical or commercial Colleges or Schools of Art in Bombay Madras or Calcutta
- Three of the value of Rs 30 a month tenable for three years in an Engineering College
- Two of Rs 25 each tenable for four or five years in the Madras or Bombay Medical College
- Two of Rs 10 to 15 tenable for three years in a College of Agriculture

The maximum yearly grant required for these scholarships is Rs 13 790 The actual budget allotment for the year 1911 12 was Rs 14 559

94 There were during the past year 17 students holding medical scholarships in Bombay or Madras 10 holding engineering scholarships in the Engineering College at Madras 2 holding agricultural scholarships in Coimbatore 29 holding technical scholarships in Bombay Madras or Calcutta and 2 holding scholarships in the Teachers College Madras The actual amount paid to these students per month amounted to Rs 1 340 or per annum to Rs 16 080 of which a sum of Rs 9 420 was to be met from State Fund and Rs 6 660 from Local Fund General

95 Besides these professional and technical scholarships scholarships for general education were awarded to 6 students studying in the Mahomedan Anglo Oriental College at Aligarh and to 4 students studying for the B A Honours Course in Madras The total amount spent on these scholarships was Rs 3 000

Thus the scholarships held by students prosecuting their studies in Indian Colleges outside the State during the year 1911 12 amounted to Rs 19 080

The provision seems to be adequate and the scholarships are fairly well distributed

Scholarships held in Foreign Countries

State Fund Scholarships

96 Until now only two scholarships appear to have been granted from State Fund one for Law and the other for Medicine

Damodar Dass Charities Fund Scholarships

97 Rules for the grant of scholarships for scientific research and technical education from the Damodar Dass Charities Fund were first issued in May 1906 Ordinarily two scholarships of £200 each are granted every year and each scholarship is tenable for two years or such other period as may be fixed by the Mysore Government having regard to the subject selected for study or research The scholarships are granted to students selecting one or more of the following subjects —

I Chemistry
II Physics
III Application of chemistry or physics to agriculture or the various arts and industries
IV Medicine and any branch of biology and bacteriology
V Mechanical engineering
VI Mining and metallurgy including electro metallurgy
VII Electrical engineering

87 Each class of school may be started with at least two teachers at the commencement The elementary school may cost about Rs 600 per annum, the secondary school Rs 1,500 per annum, and a girls industrial school about Rs 3,000 The expenditure will increase with the number of subjects and of pupils requiring instruction

Cost and staff

88 In villages, the girls may be given instruction in cooking, house management, field work, care of domestic animals and also in special trades like mat making, basket work, rope making, bamboo and cane work

Wherever a regular domestic subjects school for girls cannot be established for want of funds, classes for teaching special subjects may be attached to an existing girls school In the last resort, morning classes or lectures may be arranged for

B Special Classes, Continuation Schools or Classes and Lectures

89 A detailed description of each of the suggested types of smaller technical and industrial schools having been given, it is proposed in this section to suggest other forms of provision for technical education suited to places which, from poverty of resources or want of facilities, are unable to adopt one of the suggested types in all its completeness The alternatives suggested are (*a*) Special classes, (*b*) Continuation schools or classes, and (*c*) Lectures

(a) Special Classes

90 Where suitable accommodation is available either in the local school or in close proximity to it, special classes for instruction in any of the courses suggested for model schools may be held during the usual working hours of a school These classes may be in charge of a teacher specially appointed for the purpose but under the general management of the headmaster of the local school The cost of maintaining a single class of 30 pupils may vary from Rs 150 to Rs 400 a year according to the course selected and the qualifications of the teacher

(b) Continuation Schools or Classes

91 Where separate accommodation is not available for special classes, morning or evening classes for instruction in selected subjects may be held in existing school buildings These classes may be conducted by local teachers who have obtained technical training or until trained teachers become available by skilled artisans under the guidance of a teacher of the local school The class may be held for two hours twice or thrice a week The minimum remuneration for each day s work may be 8 annas in the case of a teacher of an elementary or middle school and Re 1 in the case of a high school teacher These classes should be open not only to regular students but also, as far as possible, to all others who wish to attend them

(c) Lectures

92 Organised courses of lectures on subjects suggested for model schools may be delivered in selected places by competent local teachers or itinerant lecturers specially appointed for the purpose The aim of instruction should be to give the pupils information on points likely to be of great practical value to them and by a description of the material, tools, etc , employed in the industry to stimulate interest in their calling

The salary of a whole time lecturer, when one is appointed for the purpose, may according to his qualifications be from Rs 50 to Rs 100 In the case of

84 The girls institutions may be considered under three heads —

(1) Elementary domestic subject schools
(2) Secondary domestic subjects schools
(3) Industrial and craft school

85 The general education needed by girls in this country is a course calculated to foster in them habits of diligence order thrift cleanliness neatness and accuracy

Every girl should be taught sewing as is done in Japan

To all classes of girls household economy should be taught to girls of the higher classes lessons in ordering adjusting and managing a house and to those of the lower classes elementary lessons in house work housekeeping sewing and cooking

86 Courses of study —

(1) *Elementary Domestic Subject School*

Domestic economy (elementary lessons in house work and housekeeping)
Sewing
Cooking
Laundrying

(2) *Secondary Domestic Subject Schools*

Reading writing and arithmetic Instruction in household economics (house work and management of the house)
Hygiene
Home medicines nursing and infancy

Special Subjects

Music
Needlework

(3) *Industrial School for Girls*

The curricula will have to be specially prepared where a high class industrial school is needed Such a school will sooner or later be necessary in places like Bangalore and Mysore

The girls should have gone through one or the other of the domestic subjects schools before preparing themselves for any special industry or art trade

The main object should be to teach the girls of the poorer classes some sort of industry so as to enable them to gain their livelihood after they have finished their scholastic career

The trades in which instruction may be given are—

Lime soling
Lace making
Knitting
Millinery
Photography
Utility
Drying
Bedmaking
Making preserves

Along with each subject instruction should be given in drawing designing and estimating

77 Higher commercial education will be necessary as a preparation for business life to young men inheriting large agricultural and industrial properties and also for Government officers and managers of all large concerns

The basis of higher commercial education must be economic science, commercial history, commercial law and commercial geography The education must enable the student in after life to handle great affairs in a merchant s or manufacturer s office and he should be able to trace and analyse the profit and loss in every department of a large business

78 Provision is made in the curriculum of studies for the College of Technology for instruction in Higher Commerce A separate institution is not necessary for this purpose

Secondary Commercial Education

79 This should include —

(1) Commercial correspondence penmanship handwriting and type writing
(2) Phonography or phonetic short hand
(3) Business practice and methods
(4) Book keeping
(5) Estimates of cost
(6) Commercial arithmetic and geography and commercial law
(7) Office practice and knowledge of wares
(8) Commercial morality

80 Lower commercial education should include a training for the formation of character in the modern sense The habits of punctuality, diligence and discipline should be specially inculcated The student should be taught to cultivate a sense of honour and to understand his duties and relations to his fellowmen and the State

The subjects taught should be the three R s, book keeping, both Indian and European, correspondence and a knowledge of the resources of the country In struction should be given in the elements of commercial morality

Cost

81 Where a complete commercial school is not started, only a few selected subjects from the list given above should be taken up

We have provided for commercial classes both in the College of Technology and in the proposed technical institute in Mysore A special school of the elementary standard will cost probably Rs 1,200 per annum and that of a secondary standard Rs 3,600 But as business training is essential even along with general education classes, the teaching of commercial subjects should be provided in every town, and, where separate classes are not feasible, at least continuation schools or lectures should be arranged for

82 We attach great importance to the value of a course in economic science, statistics and public administration for every officer of the Revenue Department

(5) *Girls Industrial Schools*

83 Industrial education for girls is a matter of slow growth in a country where only one woman in 144 can read or write and where religious and social restrictions are so many and so rigorous

69 A school which trains and sends out boys that they may make a living by working at a trade cannot successfully do so unless it has a workshop working on commercial lines attached thereto The initial cost of equipping such a work shop with tools etc will vary according to the requirements of the industries selected It may be roughly estimated as ranging from Rs 1 000 to Rs 6 000 A fixed provision of about Rs 2 000 will be required for materials etc for the commercial work shop

70 These industrial schools will prosper only if the people of the locality take an active interest in them It seems important that new schools should be started only in places where people come forward with contributions towards the upkeep of such institutions

Craft Schools or Lower Industrial Schools

71 These schools are for imparting to the sons of raiyats instruction in rural crafts or industries so as to enable them to make and repair their own agricultural tools implements and other requisites

72 Instruction may be imparted in one or more of the following special subjects according to the requirements of each locality —

(i) 1 Rural carpentry (such as making country carts agricultural implements such as ploughs doors windows etc)
2 Smithy
3 Basket work
4 Rope making
5 Kambli weaving
6 Weaving (cloths of lower counts)
7 Sericulture and silk reeling
8 Mat weaving
(ii) Elementary drawing
(iii) General education in the vernacular

73 The course should be one of one to three years A small business workshop may be attached to each school where the pupils should be required to work for a further period of one to two years receiving wages for work done This should complete the training

74 The school will cost about Rs 200 to 600 per annum according to the number of subjects taught The cost of equipping such a school with tools etc will be Rs 100 to 300 An initial allotment of Rs 200 for purchase of materials etc will also be necessary

75 In places where separate schools cannot be established it should be sufficient if special classes in local schools are arranged for The annual cost would then be much less

(4) Commercial Schools

76 A proper business education for all classes of people in Mysore is an urgent necessity In many walks of life the people are following old time practices which hinder progress If however business principles are applied to daily avocations unintelligent and wasteful labour will be lessened The importance of co operative effort and mutual helpfulness should be recognized The production distribution and uses of merchandise should be better understood The means of utilizing Government help and the benefits of organization should be brought home to all classes of people

For those who have aptitude, the elements of algebra, physics and book keeping may also be taught

During the closing period of the training, particular attention should be given to preparation of designs and detailed estimates of cost

65 The standard of admission may be general education corresponding to the Lower Secondary or other equivalent examination But there should be no rigid restrictions in this respect Students trained in trade or craft schools or sons of artizans may also be admitted into art trade schools

(3) Industrial Schools

66 These schools are intended to train boys in particular industries that they may, after leaving the school, follow the industry taught and earn a living by it The work should be mostly practical and very little of theory should be taught

67 The subjects of study may be as under —

I One of the following trades —

1 Carving
2 Cabinet making
3 Carpentry
4 Carriage building
5 Painter s work
6 Lacquer work
7 Smithy work
8 Fitter s work
9 Musical wire making
10 Tinsmith s work
11 Metal work (hammered and cast)
12 Cane and basket work
13 Weaving
14 Dyeing
15 Tailoring
16 Boot and shoe making
17 Book binding
18 Brick work and masonry
19 Land surveying
20 Rope making
21 Mat weaving

II Drawing

III General education—Reading writing and arithmetic

IV Business methods

V Modelling

The course of instruction should be one of 3 to 5 years according to the nature of the industry taken up

68 The staff may consist of a superintendent, a foreman for each of the industries taught in the school, a drawing master, and office establishment to the extent needed (including teachers for general education)

Each school may take up 2 or 3 industries according to the requirements of the locality and may cost roughly Rs 5,000 a year (staff, material tools, etc, included)

58 *Cost* —The initial capital cost will vary from Rs 25 000 to Rs 50 000 and the yearly expenditure will be about Rs 12 000

In cases where economy is important the cost may be reduced by a proportion ate reduction of the subjects and staff The minimum amount required for this class of institutions may be put down at Rs 6 000 per annum

59 Industrial schools will be in greater demand than technical institutions for some time to come the difference between the two being that in the latter there will be more theory and in the former more practice Boys trained in indus trial schools will probably find employment more readily than those educated in technical schools The latter class of institutions will give a training of more scientific and therefore more permanent value

(2) Art Trade Schools

60 *Object* —The object of an art trade school is to give instruction in the application of art to industry and in the observance of the principles of grace and harmony in nature to the preparation of objects of trade and daily use The arti cles manufactured must it is true be durable and serviceable But in art trades the worker should particularly bear in mind grace of form and harmony of colour and not be merely a mechanical produer of useful wares

61 *Subjects to be taught* —A selction may be made for giving instruction in one or more of the following subjects —

(1) Wood carving including sandalwood carving and inlaid work
(2) Furniture design and cabinet making
(3) Decorative painting including interior decoration
(4) Sculpture including stone carving
(5) Photography
(6) Graphic art
(7) Gold and silver smithy
(8) Etching engraving and lithography
(9) Lace making and embroidery

Where a complete school cannot be established one or more of the arts can be taught by opening special classes in an existing industrial school or a school of general education

62 *Cost* —The capital cost of an art trade school may be roughly estimated at Rs 25 000 including buildings and equipment The recurring expenditure may amount to Rs 6 000 including materials The cost will however depend on the number of pupils and of subjects selected

63 The course of instruction for each trade should ordinarily be one of three years of which the first should be a preparatory course In some special subjects such as gold and silver smithy students will require longer practice Such practice may be afforded by extending the course by one or more years as required

64 *Preparatory course* —The subjects taught in the preparatory course should be —

(1) The elements of geometry
(2) Arithmetic
(3) English and Kanarese composition
(4) Use of scales squares and drawing instruments
(5) Geometrical drawing and geometrical ornamentation
(6) Free hand and model drawing

VII MODELS OF TECHNICAL INSTITUTIONS

A—(1) Technical Schools

55 *Object*—The object is to prepare students for scientific, mechanical, and constructional occupations according to the special requirements of each locality The students should be given an opportunity of obtaining a knowledge of the use of tools and instruments

The course hereunder prescribed is intended as a preparatory scientific and practical training for young men intending to follow an industrial career

56 *Courses of Instruction*—

General

(1) Mathematics
(2) Elements of physics and chemistry
(3) Drawing
(4) Engineering workshop
(5) Carpentry workshop

Special Subjects

Training may be given in addition in one or more of the following subjects —

(1) Mechanical engineering
(2) Building construction including earthwork and roads
(3) Electrical engineering
(4) Estimating
(5) Land surveying
(6) Hydraulic engineering including management of tanks and canals
(7) Mining
(8) Metalware work

57 *Staff and Equipment*—

(NOTE —The staff suggested will probably suffice to give instruction in two or three special subjects)

Establishment

		Rs
Headmaster		250
Drawing master		75
Two assistant masters at Rs 75 each		150
Three special assistants at Rs 50 each		150
Workshop Superintendent		100
Foreman superintendent or maistri		50
Office establishment		75
	Total	850
	Per year	10 200
Workshop expenses		700
Repairs to machinery and buildings		1 000
	Total	11 900
	or say	12 000

If a new building cannot be provided at the outset, a beginning may be made by hiring one An engineering and a carpentry workshop may be provided at a cost of about Rs 10,000

accurately the value of the articles they have to prepare They must know where the various materials required by them can be profitably purchased and where they can sell their manufactured articles to advantage They must be able to indent in writing for the materials required for their work It is therefore suggested that instruction in drawing be imparted and that pupils be equipped with a certain amount of general education before they leave the school

Scholarships

53 Provision may be made for 420 scholarships for all the nine schools to be distributed in accordance with the strength of the schools

Boys seeking admission into the schools should pay a prescribed fee for a period of at least three months when they may be given the scholarship of class A if they have been regular in attendance and hard working and if scholarships are available *Bona fide* artisans should get scholarships from the date of admission All boys should bind themselves to attend the school continuously for at least three years

As boys of these schools have to make a living by the trade they learn they will not be fit for this unless they work at it for sometime on commercial lines It is therefore suggested that there should be small workshops worked on commercial lines attached to these schools Boys should be paid wages for work done and they should put in longer hours of work They should not be given a diploma unless they have had practice for two years in a commercial workshop

Details of Expenaiture

54 The following is a rough e timate of staff etc required —

		Rs	
9	Supe intendents	900	Maximum cost
41	Instructo s	1 025	
18	Teacl ers and cleiks	40ɔ	
	Half time teacl ers	40	
27	Men als	16?	
4?0	Scholarsh ps rang ng from Rc 1 8 0 to Rs 5	1 0ɔ0	
	Mater als for boys	700	
	Tools	300	
	Cont n encies	158	
	Total pe mensem	4 740	
	Do per annum		56 880
DEDUCT—			
	The net cost of tl e mofu s l indust l scl ools incl id ng ants in a d to Melkote H i s n & Hole N rs pui scl ools	17 400	
	P obable ncon e fiom sales and fees fio n the re igan ed schools	14 480	
			31 80
	Net ad l t on il cost of the nii e scl ools		25 000

An initial provision of Rs 9 000 for equipping all the nine schools with tools etc and of Rs 21 000 for the purchase of materials and payment of wages will be necessary

48 An initial outlay of Rs 25,000 for the commercial workshop for the purchase of materials and Rs 25,000 for equipment with machines, etc, will be necessary The total capital expenditure will be Rs 50,000

VI IMPROVEMENT OF EXISTING INDUSTRIAL SCHOOLS IN THE STATE

49 With a view to improving the existing industrial schools in the mofussil, the following proposals are made —

There are now six Government Industrial Schools in the State Those at Hassan and Melkote should be taken over by Government and a new one opened at Chitaldrug There will thus be nine mofussil Government Industrial Schools in the State including the three newly proposed, as detailed below —

	Name of place	*Industries to be taught*
1	Channapatna	Lacquer work carpentry musical wire and smithy work
2	Chiknayakanhalli	Weaving coir work and carpentry
3	Chitaldrug	Weaving carpentry and smithy work
4	Dodballapur	Weaving and carpentry
5	Hassan	Carpentry cane work and smithy work
6	Hole Narsipur	Weaving carpentry and smithy work
7	Melkote	Weaving carpentry and cane work
8	Molakalmuru	Weaving and carpentry
9	Sagar	Carpentry rattan work and smithy work

50 The subjects of study may be —

(1) One or more of the industries mentioned above against the schools
(2) Drawing
(3) General education reading writing arithmetic and business methods

A progressive course of studies may be prescribed by Government The duration of the course should be one of three years in the case of lacquer work, musical wire making, drawing, weaving and cane work, and of three to five years for carpentry and smithy work

51 The details of establishment are given in para 54 Industrial schools can never be expected to prosper unless they are properly organised and carefully and intelligently supervised It is, therefore, suggested that they be placed in charge of fulltime Superintendents They must be experienced men possessing the power of organization They must also have a general knowledge of the industries taught in the school in their charge Such men cannot, under ordinary circumstances be secured on a lower pay than Rs 100 a month It is suggested that such men should start on Rs 75 per month All the Superintendents should at first be placed in that grade Those that have done really good work for at least two years may be promoted to the higher grades Others that have failed to produce good results in this period should be replaced by passed men from Technical Colleges and by men trained in the College of Technology to be started in Bangalore

Provision should be made for giving two instructors in some of the industries if the number of students be sufficiently large

52 Students trained in the school must be able to design and give clear sketches of articles they undertake to make They must also be able to estimate

There may be evening classes in drawing and lectures in a few special subjects for artisans working outside

43 Classes for imparting instruction in printing book binding etc may be opened in the Government Press in Mysore and Bangalore and they may be under the control of Mr Yates Superintendent Government Press A grant may be given for the maintenance of these classes

44 Pupils in all sections should be examined and given a diploma at the end of their course by a Board of Examiners appointed by the Mysore Government They may also appear for the Madras Government Technical Examinations

45 The institute should have a workshop equipped with up to date appliances Every endeavour should be made to give training of a high order special attention being given to developing in the pupils habits of discipline neatness and accuracy

The workshop should have two sections one for practice by pupils of the Engineering and Technical sections and the other by those of the Industries and Crafts section

46 It is an axiom that a student is best trained in a factory and it is therefore necessary to have a workshop managed on commercial lines The students of the Industries and the Crafts section should not be given a diploma unless they have attended the commercial workshops for a reasonable period They should put in longer hours of work and get wages for the work actually done

47 The control of the institute should be vested in a Superintendent

EXPENDITURE

		Rs
Superintendent		600
Four headmasters		700
Twelve lecturers		1 165
Thirty four instructors		1 335
Menials		200
		3 900
Two hundred and seventy scholarships ranging from Rs 2 to 10		1 086
Materials		600
Tools		300
Contingencies		194
		2 180
Grand Total per mensem		6 080
Grand Total per annum		72 960
Deduct—	Rs	
Probable receipts from fees and sales	18 960	
Net expenditure at present incurred on the Mysore Industrial School	20 000	
Net expenditure at present incurred on the Engineering School	9 000	
		47 960
Net excess expenditure now required per annum		25 000

Instruction may be imparted in any one of the following crafts —

(a) Cabinet making
(b) Carpentry
(c) Carving (wood and ivory)
(d) Basket and cane work
(e) Smithy work
(f) Machine work
(g) Fitters work
(h) Foundry work
(i) Sheet metal work
(j) Printing
(k) Weaving and dyeing
(l) Brick work and masonry
(m) Engraving

39 As the school develops, some of the following subjects may be selected and added to the course of instruction —

(a) Building construction
(b) Land surveying
(c) Plumbing
(d) Carriage building
(e) Painters work
(f) Electrical work
(g) Motor driving
(h) Boot making and leather manufacture
(i) Watch and clock making
(j) Typography
(k) Tailoring
(l) Pottery

General Subject

40 A knowledge of the Vernacular, English and Arithmetic up to the Lower Secondary standard may be imparted The other general subjects may be

Drawing
Business methods
Modelling (for a few selected pupils)

The course should be one of three to five years in accordance with a progressive course of studies divided into 3 to 5 sections to suit the respective courses

Scholarships

41 Boys seeking admission into the first class of this section should pay fees for three months, at the end of which they may get the scholarship of the class, if they are regular in attendance and hard working and if scholarships be available If the boy be an artisan, he should be given scholarship from the date of his admission A student seeking admission with previous knowledge of the industry may be taken into the standard for which he is fit on payment of a fee for one month He should get the scholarship of the class for which he is fit from the second month All students should bind themselves to attend the school continuously for a period of at least three years

42 Pupils of other schools may be given instruction in drawing alone The rates of fees for the different standards may be fixed after the institution is started and is in working order

V CHAMARAJENDRA TECHNICAL INSTITUTE IN MYSORE

33 The proposed Chamarajendra Technical Institute at Mysore which v be formed by the amalgamation of the existing Engineering and Industrial Scho in that city should con ist of three sections —

(i) Elementary engineering inclu ling architecture
(ii) Tecl nical
(iii) Industries and crafts

Engineering Section

34 Candidates seeking admission into this section must have passed the Matriculation or the School Final Examination

Instruction should be imparted in—

1 Civil engineering i cluding architecture (bu l lings roa ls irri ation and sanitation)
2 Mechanical engineering

The students should be given a certain amount of training in the workshop in building construction and in business correspondence and estimating The course should be one of three years

Scholarships

35 Three scholarships of Rs 7 and two of Rs 6 each at the end of the first year and two of Rs 10 and two of Rs 9 each at the end of the second year may be awarded to the first two persons on the list of successful candidates in each of the two branches

Technical Section

36 Candidates seeking admission into this section must have passed the Matriculation or the School Final Examination The subjects of study should be —

1 D awing
2 Mathematics
3 Elementary phy cs
4 Elementary cl e n stry
5 One of the following special subjects —
—(a) Macl ine work
(b) Weaving and dyeing
(c) Pl otog aphy includin process wo k
(d) Com nercial subjects such as book keepi g business corresponlence shorthan l and type wi ting and banking
6 Wo ksl op p actice
7 Gymnast cs and di ll

The course will be one of three years

37 Intelligent and capable students desirous of becoming foremen in factories may be given a further course of one year in practical worl

Four scholarships of Rs 5 each at the end of the first year and four of Rs 7 each at the end of the second year may be given to the first boy in each of the groups

Industries and Crafts

38 Sons of artisans and boys of other classes (who are unable to continue their studies and who have no other means of earning their livelihood) may be ad mitted into this section to learn a trade

27 The cost of the staff may be estimated as under —

	Rs
(1) Four professors Rs 500 800 average Rs 650 per mensem	31 200
(2) Four lecturers average Rs 200 each per mensem	9 600
(3) Experts and demonstrators	10 000
(4) Miscellaneous staff	6 000
(5) Experiments in industries and commerce	10 000
(6) Workshop	7 500
(7) Library museum etc	5 000
Total	79 300 or
say	80 000

The expenses may be reduced by employing engineers and professors of existing colleges to give instruction for a few hours every week They may be given some allowance for doing the work The total cost for the next five years should not exceed Rs 75,000 a year

28 The whole of the staff at least for the next five years may be temporary and no member should be engaged for more than three years at a time This is necessary for three reasons The most important one is that Government will be able to sanction proposals speedily without the fear of imposing a permanent burden on the State The establishment may be reduced after due notice if the finances of the State are found to be unequal to the strain Secondly, it is not desirable to saddle Government with a large permanent staff, for whom employment will have to be found or compensation given, if it becomes necessary to dispense with their services The third reason is that temporary men can be changed till properly qualified men are secured for our work A permanent officer may often no doubt have a higher incentive for his work, but he is also likely to lose interest and become dissatisfied if he should not receive promotions as rapidly as members of other branches of the Government service

29 The teaching staff will be expected to keep touch with experiments in industries and with the working of all technical and industrial institutions in the State

Capital Outlay

30 The college may have to begin work partly in hired buildings A sum of about Rs 3 lakhs will for the present, suffice for opening the college After a period of about 5 years some additional expenditure on buildings and equipment may be necessary

Ways and Means

31 This institution should be maintained entirely from State Funds Donations may, however be accepted if public spirited gentlemen desire to contribute Fees levied from students will, to a certain extent, supplement the State Grant

Administrative Control

32 The College should be under the direct control of a Principal or Director, who will work under the general guidance of a council consisting of Government officers and non official gentlemen, the latter selected chiefly from among those connected with industries, manufactures or trade ( )

For officials and others who cannot attend during the day special lectures may be given in the evenings

The course in commerce should be one of two years There may be one professor and one instructor for the present and the students may be supplied with the necessary reference books from the library

The minimum qualification for admission for regular students should be the successful completion of the Intermediate in Arts or other corresponding examination

(4) Workshop Practice and Library

23 The present Public Works workshop should be developed and utilised for affording practice to the students of the college A competent Superintendent should be appointed

The library should contain books on civil mechanical and electrical engineering industries and commerce The libraries of the Civil Engineers Association (and the Economic Conference) may be developed and utilised for this purpose for the present

Later on a museum may be started in conjunction with the library

24 As the resources of the State do not admit of the duplication of institutions it is suggested that the existing workshops and libraries be developed and utilised so that the expense of providing new ones may be saved

Staff

25 Similarly the State cannot afford to have a large staff of professors and teachers Three or four highly qualified professors may be employed and the rest of the staff may consist of lecturers locally trained

Having regard to the financial exigencies of the State it is better to make a commencement with the institution with such staff as funds will allow at first We have to choose between higher training with the aid of an inadequate staff or no training at all

26 A professor for mechanical and electrical engineering one for textile engineering one for architecture and building and one for commerce will be needed at once

In order to save expense some of the engineer officers stationed in Bangalore may be asked to lecture for a day or two every week

For some time to come the latest book and journals on each subject should be provided and the students left to acquire knowledge by studying them under the general guidance of the professors and the lecturers

In a few subjects instruction may also be given by means of special lectures either morning or evening so that those who are interested in the development of particular industries for which the State cannot at present afford to provide regular courses in the College may acquire some expert knowledge

Drawing should be given a prominent place in the first four divisions, and lessons should be given in photography The detailed courses in pure and applied sciences might be settled by the staff when appointed The instruction which the Institute of Research and the Central College may consent to give in these subjects to students of the College of Technology should be fully availed of, so that, as far as possible, there may be no overlapping of courses of study in the three institutions

The course in this section should be one of three years for each branch, the first year s course being common to all and the remaining period being devoted to special training in the selected branch

Students who have passed the Intermediate or First in Arts Examination may be considered eligible for admission

(2) *Special Industrial Education*

21 In this section, the College should, as far as possible, provide facilities for giving instruction in the following industries —

(1) Textiles dyeing bleaching and printing
(2) Ceramics and manufacture of glass
(3) Tanning and leather work
(4) Manufacturing of oils paints and soaps
(5) Sheet metal work
(6) Brewing
(7) Motor engineering

The full course in this section should also be one of three years The passed candidates of the technical schools may be considered eligible for admission to this section The course of studies should be of the standard needed to train the pupils for employment as managers of mills or other similar posts or as headmasters of technical and industrial schools in the mofussil

(3) *Higher Commercial Training*

22 The subjects to be taught in this section should include some or all of the following —

(1) Commercial mathematics
(2) Accounting and auditing
(3) Banking
(4) Mercantile law and practice
(5) Economics
(6) Economic geography
(7) Statistics
(8) Political economy
(9) Public finance
(10) Public administration
(11) Local and municipal institutions
(12) Problems of transport and railways
(13) Co operative associations and organization of industries
(14) Commercial history—History of industry and commerce
(15) One foreign language either German or French

Some of the subjects under commerce should be of interest to official and the general public The lectures in those subjects should be open to the public as far as possible

morning or evening or a course of lectures For instance where a fully equipped commercial school cannot be started one or two commercial classes may be provided in connection with an existing educational institution When even this is found too costly morning or evening classes for the same purpose may be organised When there is not much demand for such classes lectures may be arranged for for an hour or so once to three times a week merely to rouse interest in the subject Where local lecturers are not to be had itinerant lecturers may be appointed to visit given centres at periodical intervals The main object is to bring every form of education within the reach of the classes of people who desire it in some suitable form at first and more highly developed forms as resources permit and as the importance of the subject begins to be understood

16 The two large institutions proposed at Bangalore and Mysore should be maintained entirely at Government cost If the districts wish to take a prominent share in the benefits students should be sent up at the cost of Municipalities guilds of tradesmen weavers etc Government will also give a few scholarships to selected students

17 It is recommended that the District Boards Municipalities and other local institutions as well as associations and guilds of tradesmen be encouraged to start institutions or classes or organise lectures in subjects which in their opinion are calculated to multiply the occupations of the people or increase the volume of business in the locality If the local authorities or inhabitants make up their mind to contribute a substantial share of the cost Government should not hesitate to pay the balance and help to bring into existence the institutions needed

IV College of Technology in Bangalore

18 It is suggested that a College of Technology be established in Bangalore to give instruction in higher engineering and industrial arts

Object

The object of the institution should be to train students who have already received a fair amount of general education so as to qualify them for taking a leading part in the management of industries and commerce in the country The training in commercial and economic subjects including systems of administration in foreign countries will be of great value to officers of Government who are likely to become heads of districts Some of the trained students will be fit for recruitment to the State Public Works and Electrical Departments

Curriculum

19 The course including workshop practice and laboratory may be divided into three sections as under —

(i) Higher technical education
(ii) Instruction in special industries
(iii) Higher commercial training

(1) Higher Technical Education

20 The following subjects may be included in the first section —

(i) Civil engineering including sanitary and municipal engineering
(ii) Mechanical engineering
(iii) Electrical engineering
(iv) Architecture and building construction
(v) Economic geology and mineralogy

9 Notwithstanding the good work they are doing, we consider that the Government Schools are not maintained in a proper state of efficiency and need to be reorganised

III General outline of institutions proposed and their object

10 It is suggested that facilities should be provided for giving instruction in all the three grades of technical education, higher, secondary and primary In the elementary courses, instruction should be given to the artisan classes and to people actually engaged in business and trades, such as—

Building
Carpentry
Furniture making
Weaving
Shoe and boot making
Tailoring
Manufacture of carpets
Mats
Cooking utensils (brass copper and bell metal)
Artware
Pottery
Printing etc

The secondary technical education should have for its object the training of mechanics, assistant foremen, teachers for industrial schools, etc In addition to instruction in one or more trades, the men of this class should have some general training in correspondence, commercial arithmetic, elementary mechanics, physics and chemistry

The higher technical education should qualify the students for the management of factories and other large industrial concerns An attempt should be made to provide commercial and business training for men in all grades of occupations

11 It is suggested that a College of Technology should be started in Bangalore to give instruction in engineering and in special industries If, by reason of the equipment being inadequate, the instruction given in any subject is found to be defective, the students will have to finish their education in other superior institutions in British India or England or other foreign countries

12 For secondary education, a model school of Technology should be maintained in Mysore Government have already decided to start an institution of this kind, to be called "The Chamarajendra Technical Institute, with which will be amalgamated both the existing Engineering School and the Industrial School in Mysore A building at an estimated cost of Rs 2,41,215 is under construction for this purpose and is expected to be ready early next year

13 The existing industrial schools in the State should be improved and developed as far as circumstances permit

14 For all classes of institutions to be established in other centres, model curricula, staff and approximate estimates are given Any town which wants one or more institutions of the classes named may make its own selection from the given list

15 In many towns and large villages, the cost of starting model institutions may be prohibitive This difficulty may be overcome by establishing special classes

II EXISTING INDUSTRIAL SCHOOLS

5 There are at present seven Government Industrial Schools in the State The one at Mysore was started in March 1892 The other schools were started under Government Order No 14668 77—Edn F 14 96 dated the 7th April 1903 which says The object in view should be not the imparting of any ideal theoretical or scientific course of instruction but the teaching of such industries and trades on improved methods as are adapted to supply the present wants of the people such as carpentry weaving silk rearing iron work rattan work lacquer work etc and to turn out a number of pupils fully equipped with the means of earning their livelihood

The weaving schools were expected to train young boys in weaving various kinds and patterns of cloth on fly shuttle looms so that the weavers of the locality concerned might introduce improvements in their looms and be enabled to increase their profits by the resulting saving of time and labour

6 The Mysore School has a full time Superintendent helped by an Assistant and maistries The other schools are looked after by persons who hold appointments in the local High or Anglo Vernacular Schools These men are not able to give sufficient time to their additional duties and the schools are virtually left in charge of maistries In spite of these defects the weaving sections of these new schools have done good work by demonstrating to the public the advantages of using fly shuttle looms

Cloths of finer counts unknown before are now produced In Melkote and Hole Narsipur silk and cotton yarn are dyed locally to a certain extent The school at Channapatna is doing very good work The Mysore school has developed in all directions

7 Besides the above there are eleven aided and three private schools Carpentry is taught in eighteen schools blacksmith s work in four rope making in two and each of the following industries in one or more institutions —

(1) Pottery and terracotta
(2) Fitters work
(3) Masonry
(4) Agriculture
(5) Lacquer work
(6) Musical instruments
(7) Nature study or nature school
(8) Embroidery
(9) Lace making
(10) Knitting
(11) Brass work
(12) Drawing on all branches

Of the aided institution the schools at Kolar and Tumkur have done excellent work

8 The expenditure incurred on Government institutions excluding materials used in workshops amounted in 1910 11 to Rs 32 262 The grant paid in aid of industrial schools amounted to Rs 8 710 Thus the total annual expenditure according to the accounts for 1910 11 amounted to Rs 40 972 (*vide* Appendix II)

TECHNICAL EDUCATION IN MYSORE

I Preliminary

The Government Order of 28th October 1910, reproduced in the Appendix, appointed this Committee for the purpose of formulating a definite policy and plan of work for developing industrial education within the State We were asked to consider the subject in all its aspects and submit a full and detailed report laying down a comprehensive programme with defined courses of training

2 The first meeting of the Committee was held on 25th November 1910, at which at the request of the Committee, Mr V Rangaswamy Iyengar undertook the duties of Secretary to the Committee Work was interrupted for a time by the departure of Mr Weir on leave from 19th April 1911 On his return, Mr Weir attended a meeting, on 27th June 1911, by which date the Committee had formulated most of the recommendations embodied in the report

The sudden death of Mr Weir on 31st July 1911 deprived us of the services of a most valued colleague Before proceeding with the report, we desire to place on record our high appreciation of the active interest Mr Weir evinced in our work and our profound regret at his premature death

3 We have found some difficulty in devising a programme, which, while satisfying the requirements of the Government Order as regards comprehensiveness, would at the same time be well within the limited resources of the State At an early stage of our deliberations, we came to the conclusion that an annual additional outlay of Rs 3 lakhs would be a reasonable expenditure for the development of industrial education in the present financial circumstances of the State

As complete institutions cannot at once be established for every form of technical or commercial education, we have thought it necessary to content ourselves with recommending the establishment of two large institutions, one in Bangalore and the other in Mysore Even these will not have all the equipment necessary according to western standards for a long time to come But we believe that, by laying down a syllabus and appointing a few competent instructors, we would be making at least a commencement in providing specialised training for boys anxious to prepare themselves for industrial occupations

4 In the years 1874 78, there was an Engineering School in Bangalore, in which higher education in engineering and forestry was given, and that education sufficed to train officers, one of whom officiated as Chief Engineer of this State a little while ago and another has been occupying the office of the Conservator of Forests in Mysore And yet the College of the Seventies employed only one European Executive Engineer and one Indian Lecturer Conditions are more favourable now and more money can be spent on technical education If, in some of the subjects, the training given locally is found to be inadequate it may be supplemented by a more extended course in one or more of the leading institutions of Western countries

Bangalore,
8th May 1912

From

M Visvesvaraya, Esq , M I C E , C I E ,
Chairman, Industrial Schools Committee,

DIARY No 6627
11 MAY 1912
TECHNICAL Ed
FILE No 46209
SUB No 14

C S Balasundaram Iyer, Esq , B A ,
Offg Secretary to the Government of
his Highness the Maharaja of Mysore,
General and Revenue Departments

Sir,

I have the honour to refer to the draft report on the scheme of Technical Education in Mysore which was submitted by the Industrial Schools Committee under No 441 dated the 16th November 1911, and to request you will be so good as to move Government to authorise the Provisional Secretary of the Mysore Economic Conference to place this important subject before the next Conference for consideration and discussion by that body I am forwarding copies of this letter and of draft report to the Provisional Secretary for the purpose

2 Copies of the draft report were sent in the month of December last to all the members of the Conference, as well as to a few outsiders for an expression of their opinion if they wished to offer any Some few gentlemen have already responded

3 We would suggest that the Education Committee who form the executive body of the Economic Conference be also requested to go into the matter in order to facilitate the

discussions before the Conference and practical action in subsequent stages

The members of this Committee will be glad to meet the Education Committee, if necessary, so that any explanations needed may be furnished, and questions asked and answered

4 We would also suggest that the attention of the members of the Conference be invited to the recommendations on pages 31 to 34 of the draft report as it is upon them, in our opinion, the discussions of the Conference may be usefully focussed

5 Unless otherwise desired, we propose to submit the report and recommendations in their final form in July next after we have had an opportunity of hearing the views of members of the Conference who take an interest in the subject

I have the honour to be,

Sir,

Your most obedient servant,

R C Simonds

Chairman

Industrial Schools Committee

1½

6627

G I S 26]

File No 462 09
Serial No 15

Diary No of letter replied to 6627

No 298
Edn 462 09
9/9/12

General and Revenue Secretariat
( )
the 19

Date of issue

Signed by Mr S B R

To
The Personal Secty,
Economic Conference.

Sir,

I am directed to forward herewith a copy of the draft report of the Committee appointed for the improvement of Mahr education in the State and to request that the matter may be placed before the Mahr Committee of the Economic Conference Special

2 ~~It is understood that~~

over

SUBJECT

attention of the members of the Sub-Committee may be invited to the recommendations contained in paras 31 to 34 of the report

[illegible]

[illegible] 1.7.12

For Secy

[illegible]

83

2/7/12

[illegible]

3/7/12

List of enclosures,

Copied by [illegible]

Examined by [illegible] 8/7/12

Urgent

etc 6091

610

D 6944

115

Edu 462-09

Serial 16

Bangalore,
25th July 1912

From

M Visvesvaraya, Esquire,
Chairman, Industrial Schools Committee,

To

K R Srinivasaiengar, Esquire, M A ,
Offg Secretary to the Government
of His Highness the Maharaja of Mysore,
General and Revenue Departments,
Bangalore

Sir,

With reference to my letter No 441 dated the 16th November 1911, forwarding a copy of the draft report of the Industrial Schools Committee, I have the honour to request you will be so good as to inform me what amount Government are likely to set apart for technical education during the current year and in the next two years The draft proposals are being finally revised by the Committee and the selection of work and the suggestions to be put forward for practical action will depend upon the amount that Government may be able to provide for this purpose in the immediate future

2 As the Committee hope to take up the work of the revision of the report before the 10th proximo, I request you will kindly obtain and furnish this information for communication to the Committee if possible by the 5th idem

Wolgul

IV

Secy 26 7-12

From

The Chairman,
Industrial Schools Committee

To

The Secretary to Government,
General & Revenue Department

Bangalore 25th July 1912

No. 6091

Subject

Requesting to know what amount would be made available for the improvement of technical education in the next 3 years

3 Mr A Chatterton, Special Adviser for Industries and Commerce, is of opinion that the industrial education work, at least in the cities of Bangalore and Mysore, should be - under the control of the officers responsible for the development of industries and commerce in the State and he thinks it absolutely necessary that we should know what amount would be made available for expenditure in the next three years

4 If Government do not wish to spend any money in the year 1912-13, the Committee will submit the general scheme and will abstain, for the present, from committing themselves to any specific proposals for starting operations in the - current year I request you will be good enough to move Government to favour me with a very early reply

I have the honour to be,
Sir,
Your most obedient servant,

Chairman

GRS 26]

File No
Serial No

Diary No of letter replied to 610

No 1657
Edn 462-09
20 8 12

General and Revenue Secretariat
( )
the 19

To The Chairman,
Intt School Committee

Date of issue 20 8 12

Signed by

Sir,

With Reference to your letter No 6091 of the 25th July 1912 Requesting to be informed ~~as to~~ what amount Govt are likely to set apart for technical education during the Current and the next two years to enable the Intt School Committee to submit ~~their~~ proposals

over

SUBJECT

In the ~~matter~~ I am directed to state that a sum of Rs 60,000 has been sanctioned in the current year's budget for technical education of which Rs 50,000 is for capital cost and Rs 10,000 for recurring expenditure. It is not possible to say what provision will be made in the next two ~~years' budget~~ years for the purpose. Govt however will be glad if the Committee could submit their final report early and also state what sums they require as a necessary allotment for the present as well as future years to enable them to pass suitable orders in the matter.

I have &c

23 15/8/12

Secy to Govt

Copied by 16/8/12

Examined by

Mr 83 14/8/12

Mr 14/8/12

AP/20/8/12

List of enclosures,

Urgent

Diary No 1703
1909-10
Edu
462
18

No 86/Eme 1

BANGALORE 10TH SEPTEMBER 1912
7

FROM

THE COMMITTEE FOR INDUSTRIAL EDUCATION
(Appointed in Government Proceedings No 3085 9—Edn 462 09 2 dated the 28th October 1910)

To

THE SECRETARY TO THE GOVERNMENT OF MYSORE
GENERAL AND REVENUE DEPARTMENTS
BANGALORE

SIR

We have the honour to submit a detailed report comprising a scheme of Technical Education in Mysore as called for by Government in their Proceedings No 3085 9 dated the 28th October 1911 In compliance with instructions received a comprehensive programme with defined courses of training has also been indicated as far as it is possible to do so in a general scheme of this sort

With a view to submit proposals for immediate action the Chairman of this Committee addressed you recently asking for information as to the amount Government were prepared to spend on Technical Education in the current year as well as in the next two or three years We notice from your reply No 1657 dated 20th August 1912 that a grant of Rs 50 000 capital and of Rs 10 000 recurring has been sanctioned

2 Before any practical programme can be drawn up it is important that Government should be prepared to state what money they desire to spend for a definite term of years In the absence of specific instructions on this point we have thought it necessary to assume figures as under which we consider reasonable for the next three and a half years —

	Capital	Recurring
	Rs	Rs
1912 13	30 000	30 000
1913 14	50 000	1 35 000
1914 15	50 000	1 55 000
1915 16	50 000	1 60 000

3 The draft report on the scheme of Technical Education was prepared in November 1911 and copies were submitted to Government and simultaneously circulated to members of the Economic Conference and other gentlemen interested in the subject with a request that they would favour the Committee with their criticisms and suggestions These opinions have now been received

The scheme was also placed before the Economic Conference during the last Birthday Session but for want of time it was not taken up for discussion

We understand that the Education Committee of the Economic Conference have gone into the scheme and made certain recommendations

Some selected opinions received have been printed as an enclosure to this letter

4 The opinions given by the gentlemen consulted show that no serious objection has been taken in any quarter either to the scheme as a whole or any important section thereof, save in respect of the proposed College of Technology in Bangalore After a careful consideration of the suggestions received, we have thought it desirable to suggest the postponement of the establishment of a college for the present, but we consider it necessary that a beginning should be made with at least a few classes which should form the nucleus of a future college As suggested in the report all necessary scientific training that is available in the Institute of Science and the Central College should be fully availed of by the students of these classes

5 It would be possible to provide staff and conveniences, including a hired building, at an outlay of Rs 25,000 per annum to commence with We attach great importance to the training of leaders and managers of industries, which shall be the object of this class Some selected students and apprentices to the number of about a dozen may be admitted to the class from 1913 The workshop in Bangalore will have to be enlarged We understand that proposals, to this end, are under consideration in the Public Works Department

6 The grant for the current year for developing the Chamarajendra Technical Institute in Mysore stands at Rs 50,000 capital and Rs 10,000 recurring As it is understood that the building is not likely to be ready for some months to come, we propose to redistribute the grant as follows —

	Rs
(1) Classes for the higher Industrial Education (Equipment and Apparatus)	12 500
(2) Chamarajendra Technical Institute	22 500
(3) Subsidies and Grants in aid and Model and Demonstration Schools	12 500
(4) Direction and Control	12 500
Total	60 000

Out of a total of Rs 60,000 granted for this year, Rs 22,500 may be given for capital and recurring outlay in connection with the Chamarajendra Technical Institute and the balance of Rs 37,500 utilised for making a commencement with the working of a Technical Education programme as recommended above

The workshop in Bangalore has to be developed and subsidies and grants in aid given, as local bodies or individuals come forward with sufficient funds to supplement Government grants It is important that the foreign scholarships should receive early attention if we are to get trained men within the next few years for industrial and commercial work within the State

7 The Committee therefore beg to recommend that the annual expenditure for the three years, commencing from 1913 14, inclusive, may be as shown below —

Items	1913 14	1914 15	1915 16
1 Higher Industrial Education	25 000	25 000	25 000
2 Chamarajendra Technical Institute	25 000	25 000	25 000
3 Improving existing Industrial Schools	10 000	25 000	25 000
4 Subsidies and Grants in aid and Model Institutions	10 000	15 000	20 000
5 Scholarships and Foreign Training	40 000	40 000	40 000
6 Direction and Control	25 000	25 000	25 000
Total	1 35 000	1 55 000	1 60 000

The capital outlay in each of the three years may be taken at Rs 50 000

8 In connection with the general scheme we have recommended an initial capital outlay of Rs 5 lakhs spread over three years and a recurring outlay of Rs 3 lakhs Our present proposal for a commencement is the modest one indicated in paragraph 6 above which involves a capital outlay of Rs 3 ,000 in the current year of Rs 50 000 in each of the succeeding three years besides a recurring outlay of Rs 25 000 for the current year and Rs 1 3, 000 1 ,5 000 and 1 60 000 respectively in the succeeding three years Government have already sanctioned Rs 60 000 for the current year and we now propose merely to redistribute the grant No additional grant will therefore be needed till the 1st July next if these proposals are sanctioned

9 As two months of the official year have already elapsed we request that Government will be pleased to sanction the programme outlined in this letter at a very early date The details may be worked up in consultation with the Education Department by the Special Adviser for Industries and Commerce to whom we recommend that the execution of the proposals may be entrusted The Adviser may be required to work in consultation also with the Education Committee as well as with the Committee for Industries and Commerce of the Mysore Economic Conference

10 We also beg to suggest that a small Committee be at once formed with Mr Chatterton as Chairman and the Inspector General of Education Mr Subbaswami Iyer and Mr B C Srinivasiengar as members to report for the sanction of Government a detailed scheme of work and proposals for spending the grants recommended for the current and the coming year

11 To sum up we recommend that—

(1) The scheme of Technical Education in Mysore elaborated by the Committee be approved by Government as a basis for practical action for the next five years

(2) The full scheme which involves a capital outlay of Rs 5 lakhs and a recurring annual outlay of Rs 3 lakhs be brought into operation as early as circumstances permit

(3) That for the next 3½ years commencing from 1st January 1913 the programme of work and the expenditure suggested in this letter be sanctioned

(4) A Committee with the Special Adviser for Industries and Commerce as President be appointed at once to formulate detailed proposals to give effect to the programme and utilise the funds allotted in the current year and to be allotted for the year 1913 14 in consonance with the principles indicated in this letter and the accompanying report

We have the honor to be
Sir
Your most obedient servants

M Ramanaya
V Rangacharya
C Krishna Rao

ENCLOSURE No 1

These enclosures

Govt — [illegible]

in print

123

No 581 635

OFFICE OF THE MYSORE ECONOMIC CONFERENCE
RINGWOOD BANGALORE
Dated 5th December 1911

FROM

C KRISHNA RAU ESQ BA
Secretary Education Committee

To

SIR

As a Member of the Committee appointed by the Government of Mysore for the elaboration of a scheme for the improvement of Industrial Schools in Mysore I am desired to forward for your perusal a copy of the draft report prepared by the Committee and to request that you will be so good as to favour the Committee by the 10th of January next with any observations and suggestions that you may wish to make in regard to the proposed scheme

I have the honor to be
Sir
Your most obedient servant

C KRISHNA RAU
Secretary Education Committee and
Member Industrial School Committee

124

ENCLOSURE No 2

Copy of letter dated 5th January 1912 from C H Yates Esq Superintendent Government Press Bangalore

I am in receipt of your letter No 581—635 dated December 5th 1911 together with copy of the draft report of your Committee for which I am obliged

2 I notice that you have addressed me as a member of the Committee I was not aware of my being one but if the fact of my not being a member does not disqualify me from complying with your request that I favour the Committee with any observations and suggestions I may wish to make in regard to the proposed scheme I am only too pleased to avail myself of the opportunity you afford me

3 I will practically confine my remarks to the industrial part of the scheme except to say that the scheme as a whole appears to me to be a very ambitious one for an initial step The Report says (para 15 p 5) that the Committee s main object is to bring every form of education within the reach of the classes of people who desire it in a crude form at first and more highly developed forms as resources permit and the importance of the subject begins to be understood In other words the Committee s intention is to lay a foundation and then build upon it as circumstances indicate My opinion is that the foundation stage should receive the greatest attention even to the exclusion of the more highly developed forms at least for some time to come My ideal is that every child should be given a fair start in life by parents if possible and failing the parents then by the State Uncultivated brains and uncultivated lands are alike so much loss to a nation

4 I was for nearly twenty years a technical instructor in a school in England The boys passed from the ordinary day school which formed part of the institution into the various workshops *after they had passed the required educational standard* When they had qualified themselves in the industry they were being taught they were sent out to situations So far as my own pupils went I could never supply the demand from masters for them and only last month an employer of several hundreds of men in India begged me if possible to send him one of my former pupil to fill a responsible post in his office and thus (to quote his own words) earn his eternal gratitude

5 During the years referred to I trained a great number of boys the majority of whom are now filling posts of responsibility in various parts of the world—India West Indies Assyria Australia New Zealand and South Africa as well as various towns and cities in Great Britain Some have extensive businesses of their own and some are editors or journalists

6 I mention these facts in detail in order to emphasise the importance of foundation work These boys had only an elementary education but it was a sound one Anything beyond that was added by themselves as they saw the need for self improvement The public gave them a good start and an opportunity of earning a comfortable livelihood and they were expected to be self reliant and industrious and do their best I started my working life in this way and my son did much the same thing only in his case a thorough technical education followed upon his school work

7 May I say here in parenthesis that I am of opinion that the phrase in para 15 already referred to will be objected to by any teacher worthy of the name However elementary the education may be, it should be thorough so far as it goes and not in a crude form at first This method of teaching has resulted in endless trouble Half of my work consists in *unteaching* men (if I may use such a word) They have been taught crudely somewhere and when once this is the case it is a most difficult matter to get them on right lines

126

8 In saying this I have the working class element of Mysore in my mind If they can be given a similar opportunity to the boys I have referred to I see no reason why they should not succeed

9 So far as the boys now employed in the Government Press are concerned as well as those who will enter it in future I would suggest that they be given a good education in the three R s and if possible the rudiments of drawing should be taught Included in writing and reading should be a knowledge of Latin Greek and Anglo Saxon roots I have found these roots invaluable in my own case The best proof readers and examiners are the product of the composing room The standing trouble in large printing offices in India is the want of good examiners Make capable compositors and you will then obtain good examiners

10 I am not in favour of evening classes for working boys although these are better than none at all By the end of the day the boys are tired or at least require a change of occupation Anything in the way of industrial or technical education should be carried on during the day This is the method now generally adopted in technical institutions in Great Britain Some employers send their apprentices to these classes during the day and pay their fees so conscious are they of the immediate benefits accruing thereby

11 I am of opinion that Mysore State is very far behind in the printing industry both in quantity and quality Only a small percentage of the printing required by the public is done in it The work goes to England or else is sent to Bombay Madras or Mangalore The leading printing firms in Madras are flourishing and usually have more orders than they can cope with Why then does not Mysore endeavour to at least do its own work? The best answer to this is the reply of Madras as to why it does so well and Bombay would doubtless reply similarly It is because these cities have imported efficient teachers whose influence during many years is now being so markedly felt The same result is plainly seen in Mysore City where the Wesleyan Mission Press is doing good work and making good workmen Orders are received there from the most distant parts of India The same thing will happen in Bangalore as soon as men are carefully educated for the work they are destined to do Until they are capitalists will be slow to embark their money in the business Mysore artizans are quite equal to Madras artizans given equal chances Indeed I am surprised daily at the skill they show in spite of the many disadvantages they have to face

12 The most remarkable illustration of the effect of efficient technical teaching is to be seen in Bombay I am told that in the Times of India office some thirty European workmen are now employed The result is seen in its excellent Christmas numbers and in its weekly illustrated edition Mysore need scarcely go so far as this but it can send more of its men to England to be thoroughly trained in their respective callings These men will in their turn impart their knowledge to their fellow countrymen and gradually the status of the men and the quality of their work will be raised and the money now flowing out of the State will be retained to say nothing of work being imported into it

13 This is my ideal so far as my own business is concerned I leave other men to deal with other industries But the same weaknesses which I have pointed out in one direction appear to exist more or less in all directions Fortunately the State is conscious of them and inasmuch as a knowledge of a disease is half the remedy I am very hopeful that a cure may be speedily effected And to this end I would emphasise what your Committee have so well said in para 80 p 21 — The habits of punctuality diligence and discipline (which should include neatness) should be specially inculcated The student should be taught to cultivate a sense of honour and to understand his duties and relations to his fellowmen and the State

Copy of letter No 404 dated 14th January 1912 from Rao Bahadur M Muthanna Esq Conservator of Forests in Mysore

I have the honour to acknowledge with my best thanks the receipt of a copy of the draft Report drawn up by the Committee appointed by Government for the elaboration of a scheme for the improvement of Industrial Schools in Mysore and to convey as desired my observations and suggestions thereon as follows —

In the first place I have to congratulate the Committee upon the thoroughness and ability with which it has dealt with the subject and upon the lucidity of the Report itself

The terms of the reference of Government to the Committee limit its deliberations to the management and improvement of the existing Industrial Schools but the Committee has travelled beyond this limit and has reported upon a comprehensive Scheme of Technical and Industrial Education for the State They may be excused for doing so for the temptation to deal exhaustively with a subject of such vital importance to the future progress of the country when an opportunity presented itself must have proved irresistible to it particularly to its accomplished President who fresh from his visit to the countries of the West and Far East and from a close personal study of their Institutions must be chafing at the backwardness of his own native land The spirit pervading the Report is deserving of all praise Though some of the proposals may seem too ambitious and some of the objects sought may appear beyond the reach of the present and the next succeeding generations the ideal kept up throughout the Report will commend itself to all true patriots

With these remarks I shall proceed to deal with the various subjects reported on by the Committee

I COLLEGE OF TECHNOLOGY IN BANGALORE

2 The first place is given to the proposal for establishing a high class College for giving instructions in higher Engineering and Industrial Arts the object being to train a body of men able to take charge of large industrial and commercial concerns It seems to me that such a College is not needed at present firstly because the very highest training in Civil and Mechanical Engineering can now be secured at a trifling cost to our students in the existing Indian Colleges secondly because the existing industries and those that may be brought into existence in the near future would require only a limited number of men who could be deputed to Europe and other countries to prosecute their further studies after passing examinations in the Indian Colleges and in the Technical Institute proposed under Section V Further it may be noted that advanced training in applied sciences and chemistry is imparted in the Indian Research Institute (popularly known as Tata's Institute) to which Mysore students have access

The capital expenditure on the proposed College is estimated at Rs 3 lakhs and the recurring annual expenditure at Rs 80 000 It appears to me that such expenditure is not justifiable until we have made some progress in Technical and Industrial education For our present needs and for some years to come an Institute such as is proposed under Section V of the Report seems sufficient

II CHAMARAJENDRA TECHNICAL INSTITUTE IN MYSORE

3 The establishment of an Institute for providing secondary Technical and Industrial Education seems a necessity and I heartily support the recommendation of the Committee for amalgamating the existing Engineering and Industrial Schools in Mysore and for opening a fully equipped and staffed institute in their place I would exclude Civil and Mechanical Engineering from the curricula as a far better training than we can provide in these subjects can be had in Upper Subordinate Engineering Colleges in British India I would accordingly confine our attention to the teaching of the subjects enumerated in paras 36 38 and 39 of the Report

Only students who have gone through the Matriculation or the School Final course and the Overseers and Sub Overseers Tests of any of the Indian Engineering Colleges may be declared eligible for admission into the Institute I would also raise the scholarships as follows —

1st year	Rs 10 per mensem
2nd to 5th year	15 do

The course will be one of five years

In the curricula one important subject *viz* Sculpture Inlaying Stone hewing and Polishing has been omitted apparently through inadvertence There is a splendid scope for the creation of a flourishing industry in this line in Mysore where stones suitable for building and decoration carving and sculpture are met with in unlimited quantities

I would also suggest that a couple of picked passed students of the Institute be deputed to Europe and Japan every year to complete their education so as to fit them to serve as Teachers and Managers of Factories and Industrial and Commercial concerns

An annual expenditure of Rs 73 000 is estimated for maintaining the Institute Although this limit is not likely to be reached within the next five years it is not too high a sum to pay for providing the country with men trained in various industries

III Improvement of Existing Industrial Schools

4 I would abolish all the State and Aided Schools except the two at Kolar and Tumkur and establish one central school at Channapatna for training students in the following subjects

Lacquer work Musical wire drawing Cabinet making Carpentry Smithy and Weaving

The admission into the school will be restricted to the children of artisans and the course will be one of five years Each subject will be taught by a Specialist in his own line and not by the present class of amateur teachers and maistries

Reading writing arithmetic and drawing will be compulsory in the first three years Each student must get a scholarship of Rs 5 per mensem in the first year and of Rs 7 in the subsequent years besides accommodation

A school equipped in the manner sketched above ought not to cost more than Rs 1 500 per mensem

IV Model Technical Schools

5 I approve of the course of instruction prescribed for these schools but would eliminate the following subjects —Electrical Engineering and Mining which could be better taught in a properly equipped school

As regards cost it would perhaps be not necessary to maintain such a highly paid staff as proposed The students trained in the Chamarajendra Technical Institute will probably be content with one half or one third the proposed pay

V Craft Schools or Lower Industrial Schools

6 I attach the highest importance to the teaching of rural crafts and industries to the sons of raiyats and therefore welcome the proposal for opening such schools Instead of opening separate schools for this purpose I would suggest that special classes for the teaching of the subjects enumerated in para 72 be opened in the existing Hobli Schools under teachers trained in the Chamarajendra Technical Institute or the Central Industrial School at Channapatna If this arrangement is adopted the cost would be reduced to a minimum As an inducement to children to take up the study of the industries mentioned I would have four scholarships of one rupee each per mensem in each Hobli School The course shall be one of three years and the time devoted to the special subject shall not be less than three hours per diem

VI Girls Industrial Schools

I rejoice to notice that the training of the future mothers has not been forgotten as usually done The course of instruction prescribed for them seems suitable As in case of Lower Industrial education I would have no separate schools for them but would teach the various subjects in the existing Girls Schools In order to encourage girls to continue their studies until they acquire a fair knowledge in the particular subjects they may take up I would propose that three scholarships be granted in each Girls School on the following scale

In the first year	One rupee per mensem
In the second year	Two rupees per mensem
In the third year	Three rupees per mensem
In the fourth year	Three rupees per mensem

Such girls as have passed through the entire course will be eligible for appointment as teachers in Girls Schools

VII Indian Scholarships

8 I would discontinue the scholarships for Civil Engineering and Medicine as the stage for encouraging students to take up such studies has passed and as dozens of youths are ready to undergo them without State aid

Upon the opening of the Technical Institute at Mysore it will also be possible to discontinue all the scholarships except those for Agriculture and perhaps for Mechanical Engineering

VIII Foreign Scholarships

9 I would discontinue all scholarships for scientific research as the necessity for them has ceased with the opening of the Indian Research Institute and restrict them to Technical and Industrial education The selection of students for these scholarships may be confined to the following —

(a) Passed students of the Indian Research Institute
(b) Passed students of the Chamarajendra Technical Institute and
(c) Students who have passed with high distinction in Mechanical Engineering in any of the Indian Colleges

IX Suggestion for Providing Funds for the Establishment and Maintenance of the proposed Technical and Industrial Schools

10 The Committee is fully aware that there are certain departments of the State the necessity for which does not exist or has ceased They might be retrenched or abolished altogether without impairing the progressive efficiency of the State One of the departments under reference at any rate does not exist even in any of the Presidencies It would be worthwhile in my humble opinion to take a stock of the results of the labour to these departments since their creation to see whether they have accomplished any useful or beneficial purpose in return for the lakhs spent upon them I refrain from commenting further on this subject lest I should be trespassing on forbidden ground I have no doubt however that the Committee will gladly welcome suggestions as to the ways and means for meeting the cost involved by their proposals without making demands on the resources of the State

Copy of Memo on Technical Education in Mysore by H J Bhabha Esq M A Retired Inspector General of Education in Mysore

1 I regret I am unable to put down in a short time all that I have to say on the subject of Technical and chiefly Industrial Education in Mysore I here state a few principles which do not seem to have been insisted upon in the scheme of Technical Education which has been prepared by the Committee and to make a few suggestions and remarks

2 To spread Technical Education and make it a success the first thing necessary is to coordinate it with the system of general education and nothing can achieve that purpose so well as the introduction of manual instruction drawing and modelling into all schools of general education To enable the department to introduce these subjects into all schools the only effective way is to train all teachers in these subjects in the Normal Schools The Mysore Normal School is doing admirable work but I fear it has not been sufficiently well appreciated by Government or the public It requires enlargement and better housing and better equipment Although it is the one institution that can exercise the most whole some influence on the whole ystem of education it is ill supplied with funds and its present accommodation is both scandalously inadequate and poor It is absolutely necessary to add an English Department as soon as possible to this institution and to give it a large and suitable building in a healthy locality with sufficient accommodation for well conducted and well kept hostels and recreation grounds It is this institution that will develop the instincts and natural aptitudes for manual and industrial work in all young people And no expenditure can be too large and no efforts too great to make it as efficient for the training of as many teachers as possible in manual instruction drawing and modelling To prepare an adequate number of teachers in these subjects for all primary schools and classes every district at headquarters should be provided with a Lower Secondary Training School the Mysore Normal School being called a Training College and the Headmaster or Principal with the occasional help of his staff being given general supervision over the District Normal Schools

3 Another important point which has been lost sight of in the scheme is the provision *for agricultural schools and instruction in the elements of agriculture* in all the primary schools especially those in villages Agriculture is the principal industry of the Province and the foundation of a knowledge of the science and art of agriculture must be laid in our primary schools Every village school should be provided with at least 3 acres and every taluk school with at least 5 acres of land for school gardening and experimental farming In the school gardens and farms the elementary principles of agriculture should be taught by trained teachers But their chief object should be to train boys in habits of careful observation and reasoning in all fundamental matters relating to agriculture besides an acquisition of scientific and accurate knowledge of the principles of agriculture It is therefore absolutely necessary to improve the teaching of theoretical and practical agriculture in the Mysore Normal School A great deal has been already done in the school by enthusiastic teachers to ground the vernacular teachers in the theory and practice of agriculture and methods of conducting agricultural experiments But the teaching requires to be better systematised and made more practical even at the cost of more time for instruction and more money

4 I hear there is some idea of opening an Agricultural College for Mysore No doubt such a College will in course of time be a necessity but what seems to be an immediate want is the organisation of agricultural schools at District headquarters and a large experimental farm in Mysore or Bangalore Dr Mann Principal of the Agricultural College at Poona would be the best person to consult for the organisation of such District Agricultural schools The Principal of the Coimbatore College and the Agricultural Lecturer of the Mysore Normal School should also be consulted In these Agricultural schools may be taught some or all of the following rural industries rough carpentry and black smiths work for making carts and ploughs basket and mat making rope making weaving sericulture the keeping of honey bees pottery making brass and copper vessels

While on the subject of Normal Schools I would add that there is an *absolute want of a Training College* for Women Teachers In such a College sewing cookery the elements of Physiology and Hygiene first aid the care of infants nursing and domestic science should be taught besides the other usual subjects for women teachers If all female teachers were trained and taught most or all of these additional subjects it would be possible to teach these subjects in all Girls Schools and by such teaching a great revolution would occur in the happiness of the home while practical industries suitable to Indian women would be encouraged So much money has been wasted for many years on the Maharani s College by an irresponsible Committee for purposes of show that if half of that money had been spent on a good training College for women it would have done far more good to the community than three Lady graduates and a few Matriculates who are the chief tangible result of the enormous expenditure

6 The classification of technical institutions into Higher Secondary and Primary at p 3 of the scheme is more ideal than practical and is sometimes put forward by those who import the classification of schools of general education into the department of technical instruction A more practical classification would be somewhat like the following —

1 Technical Colleges and Technical High Schools such as exist in Europe
2 Schools for Civil and Mechanical Engineering like the Jubilee Technical Institute of Bombay
3 Schools for Chemical and other superior industries
4 Commercial Schools
5 Art Schools and Art Trade Schools
6 Trade or Industrial Schools for artisans
7 Rural Industrial Schools which may be combined with district Agricultural Schools or Normal Schools

7 Taking this rough classification the highest kind of Technical Colleges such as Civil Mechanical or Electrical Engineering Colleges Agricultural Colleges or Colleges of Science like those in European capitals or even in the Presidency towns of India seem to be out of question in the present state of Mysore In judging what kind of technical institutions are best suited to a State or Province it is necessary to bear in mind the state of general education and advancement and the immediate needs of the people as well as the resources available for technical education The few Engineers Agricultural Experts and other Scientific men can be easily trained with the help of scholarships in other parts of India or Europe at present

8 There is the making of a good school for Civil and Mechanical Engineering in the Mysore Engineering School and the Mysore Industrial School With better equipped workshops and a larger staff of scientifically trained teachers specially employed or borrowed from the Public Works Department the Mysore Technical Institute formed by the amalgamation of the above named two schools would supply all the wants of the province for some time to come and train men for subordinate posts in Civil Mechanical and Electrical Engineering if an Electrical department can be added The growing needs of the Province in the three departments of Engineering have to be supplied The Engineering School has already done excellent work in turning out a useful body of Sub Overseers and Draughtsmen The mechanical Department of the Mysore Industrial School can without much difficulty be developed so as to turn out fairly good mechanics And an *Electrical Engineering Department may be* added so that the Mysore Technical Institute may become as efficient in Mechanical and Electrical Engineering as the Jubilee Technical Institute of Bombay

9 The school of Technology to be opened in Bangalore should be one for chemical and other industries such as dyeing manufacture of soap and candles manufacture of perfumes manufacture of spirits manufacture of oils paints and varnishes manufacture of glass cement manufacture sugar manufacture sulphuric acid manufacture tanning calico printing horology geological prospecting pharmacy etc There is an unlimited scope for the expansion of such a school New superior industries of which the need may be felt as the wealth

of the people increases and the standard of comfort rises may be added to the curricula of the school in course of time New industries such as the manufacture of paper from bamboos may also be taken up

10 About three or four Commercial schools for teaching shorthand type writing commercial arithmetic correspondence business forms book keeping accountancy etc may be newly opened or the existing aided schools may be further developed

11 The need of art trade schools is at present limited Schools for wood carving inlaid work sandalwood carving stone carving engraving gold and silver smiths work ornamental leather work ornamental iron and brass work lace making and embroidery superior carpet making etc may be opened from time to time as funds permit Higher drawing and design as well as modelling and painting will have to be taught in all these school or the subjects of art may be taught separately in art schools

12 Trade or Industrial schools for artisans trades such as chair making picture frame making ordinary furniture making cabinet manufacture the making of brass copper and bell metal vessels rattan work tile and brick making bricklaying mat and chick making making of glass bangles lacquer work lac manufacture ordinary pottery etc should be established at centres where there are facilities or there is a demand There is a very large scope for weaving schools in Mysore in which the use of improved flyshuttle looms can be taught The great success of the existing weaving schools is very encouraging If ready made warps can be supplied to hand loom weavers from one or more central factories the work and profits of the weavers would greatly improve

13 The Rural Industrial schools for the making of carts ploughs cloths and cumblies ropes shoes leather harnes of cattle etc may be opened separately in large villages or one or more of these industries may be added to the ordinary village school as teachers specially trained in them in Normal schools become available

14 The curricula of the different kinds of schools have to include the requisite portions of arithmetic algebra mensuration physics inorganic chemistry qualitative and quantitative analysis and will require to be carefully arranged Schools in which several industries requiring the same kind of preliminary instruction are taught will of course have common classes for all or most of the pupils Drawing and modelling also will have to be taught in common to all unless the pupils come prepared in these subjects from schools of general education

15 I do not think it is possible to arrange before hand a stereotyped scale of establishment for these schools Each school should have its own budget care being taken to see that no money is wasted

16 At one time the Mysore Government thought that all industrial schools should be self paying This I know is an impossibility as learners must waste a good deal of material, wear out tools faster than ordinary artisans and take much longer time over their work than proficient artisans Government should be satisfied if a fair proportion of the cost is recovered No fees should be charged in any of the technical schools and only a few scholarships should be provided for those pupils who show great natural aptitude and industry The rest should be paid the whole or larger portion of the value of the work done by them whenever possible

17 The technical scholarships at present given by Government for study in schools outside of Mysore whether in India or Europe should be continued

18 For the control of industrial schools the Inspector General of Education should be given one or two special assistants on Rs 300 raising to 500 according to the amount of supervising and inspecting work that has to be done Mr G Subbuswamy Iyer Headmaster of the Mysore Industrial School would make a good Inspector of Industrial Schools and one other Inspector acquainted with chemical industries may also be appointed

19 I see no need of two permanent traveling Professors or Commissioners for the advancement of such industries as are contemplated Occasional visits to Europe of the Inspector General and his Assistants in accordance with the rules for study leave would be amply sufficient for observing the advance of industrial and technical education in Europe and America

20 The whole cost of the second and third classes of schools and of art schools should be borne by the State Funds the greater portion of the cost of commercial schools should be recovered from fees and Government should be satisfied if a portion of the cost varying according to the locality and advancement of the people of all trade or industrial schools is recovered as at present from the sale of articles produced A portion of the cost of commercial and trade schools may well be borne by the Local Funds This question of providing the cost from State and Local Funds however requires careful consideration in detail

---

Copy of letter dated 31st July 1912 from D Venkataramayya Esq B A Advocate

Many thanks to you for the draft report of Industrial Schools Committee forwarded to me for observations and suggestions While congratulating the Committee for the scrupulous care and attention bestowed on the subject I wish to bring to your notice a few points on which the Committee may bestow their further attention It is only in the profession of law there is an opening for young men in a recognised form to make a living without depending on Government service In the absence of such a recognition regarding the young men trained in the Colleges to be brought into existence under your scheme the standard fixed for admission into the technical colleges as the passing of Matriculation and Intermediate Examinations is in my opinion too high It is not quite clear whether your Committee considers a knowledge of the vernaculars as sufficient for admission into the Art and Craft School If the scheme is to be worked with success according to the existing state of society in Mysore it should not be open to the criticism that there is no scope at present for employment of the young men trained in the Colleges I would therefore recommend that this draft report excellent as it is should be placed before the Inspector General of Education with a view to get his co operation in the entire remodelling of the curriculum of studies in all the Primary and Secondary Schools of the State so as to be in harmony with the special branches of study now recommended by the Committee The Lower Secondary and School Final Examinations curricula may also be remodelled on the lines of the recommendations made by your Committee It is somewhat difficult for me to conceive as to how the curricula of studies either of the Madras University or of any other Indian University could be taken advantage of without waste of time and energy to fulfil the requirements which your Committee requires to be commenced after a young man has had education in a school or college for a period of about ten years to pass the Intermediate Examination without any acquaintance with the subjects which are proposed to be taught in Technical Colleges This aspect of the question will strongly lend support to the idea of having a University for Mysore Degrees may be conferred in several branches recommended by your Committee The passing of an examination in one or two papers in literature should enable a young man to obtain a degree in Arts also The defect in the existing scheme of conferring degrees by the Madras University becomes patent when we see a young man dubbed with the degree of B A is certainly not known to the public outside as having taken Botany Geology Chemistry Physics Mathematics and other subjects The scheme of the Madras University has throughout been more of a literary kind even in science than of application of science to practical purposes The absence of degrees conferred in science alone by the Madras University to distinguish the degree from the B A and M A degrees is by itself a sufficient recommendation for taking up the question in a serious spirit by your Committee for developing a scheme for establishing a local University If the curriculum of studies is to be remodelled young men who cannot

afford to continue higher studies will take up occupations which pay them best those who can afford higher education will have a combination of technical and general education to enable them to fight the battle of life in or outside Mysore till a large number of industries spring up in Mysore itself

I thank you once more for giving me an opportunity to state my views in the matter

---

Copy of letter dated 21st February 1912 from M Shama Pao Esq M A Officiating Deputy Commissioner Tumkur

Your D O No 581—655 dated 5th December last and I thank the Committee of Industrial Education for kindly giving me an opportunity of reading an advance copy of their report I beg to congratulate the Committee on the production of a scheme which seems to have been laid out on very careful and wellthought lines To start with the establishment of a Technical College at Bangalore and of an Institute at Mysore may be undertaken I am of opinion that the improvement of the existing Industrial schools at the places named may be put off till the first batch of trained men from the institutions to be established at Bangalore and Mysore become available The causes for the unsatisfactory condition of the present Industrial Schools are deeper and require investigation The Committee are probably aware of this aspect of the question

With regard to the minimum qualifications of students for admission I would admit plucked F A s and plucked Matriculates Between these and successful F A s and Matriculates there will not be much difference so far as technical training is concerned In my opinion it is the former that have to be taken in hand more than the latter

I hope that the scheme will meet with early approval at the hands of Government later on I believe it will become necessary to establish business concerns also to provide employment for the trained men They will have to be provided with facilities for obtaining capital on reasonable terms It is highly desirable that these questions also should receive attention from now

---

Copy of letter No 175 dated 19th February 1912 from P R W Wetherall Esq Deputy Commissioner Hassan District

Adverting to your letter No 581 635 dated 5th December 1911 forwarding for my perusal and any observations and suggestions a copy of the draft report prepared by the Industrial School Committee I have the honor to acknowledge with thanks the receipt of the draft report from which it is obvious that the Committee have spared no pains in studying the existing condition of Industrial and Commercial Education in the State and with the object of laying the Industrial and Commercial education on a sound basis the Committee have proposed suitable schemes with elaborate workable details

2 What appears to be specially required at present in Mysore is to formulate a course of study in industries etc for our rising generation on scientific lines so that the crude and antiquated system may be replaced by modern methods by using time saving machinery and improved patterns of implements The development of skilled labour in the country would go a great way towards tapping the unworked resources of the State and many young men whose time is wasted on unsuccessful attempts made on no systematic lines and without perseverance will find ample scope to improve themselves and also society in general by their example Moreover business habits and perseverance becomes a matter of necessity in order to fit them for future keen competition the result of Industrial and Commercial awakening in India

3 The establishment of a College of Technology in Bangalore the improvements proposed for the existing Industrial Schools in the State the starting of models of Technical Institutions for boys and girls as also for grown up persons the suggestion of appointing competent Itinerant Lecturers grant of scholarships for industrial training in foreign countries etc are detailed and explained in a masterly way so as to be appreciated by every well wisher of the country Considering the prospective advantages which the proposed schemes are to confer upon the State the estimated cost appears moderate

4 I am strongly in favour of all the proposals made by the Committee and I trust that the Government will be pleased to accord sanction to the same

5 In conclusion I would suggest for consideration of the Committee the advisability of starting a Fortnightly Technical and Industrial Magazine for distribution by District Committees to such persons in each district who may be known or ascertained to take a lively interest in Technical and Industrial matters

6 Owing to unavoidable pressure of Jamabandi and other work I regret that your reference on this subject was not earlier replied

Resolutions I to IX passed at the meeting of the Education Committee held on the 24th August 1912 in regard to the draft - - Report of the Committee appointed for the improvement of Industrial Education in the State

- - -

I. That the scheme for the Chamarajendra Technical Institute given on pages 10 to 13 be recommended for adoption with the following modifications

(a) the words 'or an entrance examination held by the - - school authorities' to be inserted after the words 'the School Final Examination' in paras 34 and 36

(b) Group (d) of para 36 may be omitted (Passed by a - - majority)

(c) the following remark to be added at the end of para 38

'Instruction in subjects mentioned in the above para will be limited to those for which provision can be conveniently made'

(d) The following remark to be appended to para 4

'Instruction

'Instruction in subjects mentioned in this para will be confined to pupils - - - mentioned in para 38

II That the scheme for the improvement of existing Industrial schools in the State (pp 13-16) be recommended for adoption with the following modifications -

(a) 'Coir brushes' to be inserted before 'Weaving and carpentry' against Chiknayakanahally in - - para 49

(b) Rs 50-10-100 for Rs 100 and Rs 50 for Rs 75 to be substituted in para 51

(c) A remark to the effect that an attempt will be made gradually to withdraw scholarships and to introduce payment for actual - work done to be added to the - first para of section 53

III That the ideas of the Committee developed in pages 16-24 of model institutions appear to be - sound and useful but that it is doubtful whether any town or important village will desire to pay for them or apply to Government - for help to start them, that it would be useful if Government would from its own funds maintain

or subsidize liberally some - - girls' industrial schools(p 22) and special classes and lectures (p.23 and 24)

IV. That if there is demand, would be desirable for Government to give two scholarships in addition to the Damodardas scholarships every year for training in such technical or other practically useful branches of knowledge as may be selected and that a scholarship of £200 would as a rule be liberal enough (Para 98)

V The Committee cannot endorse the recommendation contained in para 99 in that form, but they consider that it would be useful to depute selected officers or others to foreign countries when any enquiry and study on the spot is necessary in any particular well defined subject

VI That the Committee endorse the opinion contained in para 105, that there should be a - - Director for the control of - - - Industrial Education; but consider that an officer on a salary not exceeding Rs.1000 a month should be secured not only to do this work

this work but also to act as - - Director of Industries and that there would not be sufficient definite work for a full time Director of Industries at present

VII That an Inspector may be appointed later on when the necessity for the appointment is felt

VIII That while a technological College on the scale proposed is somewhat too costly for the - - present, a modest beginning may be made to start a school in - - - Bangalore for some selected subject such as Electrical Engineering and those mentioned in para 21, an - - effort being made to arrange the work so as to lead to the facilities provided by the Institute of Science being utilised for more advanced education in the branches selected

IX That with the qualifications given above, the Committee considers that the scheme submitted by the Committee appointed by Government is well considered and ably worked out and that the recommendations deserve to be carried out by Government

Copy

Signed / C Krishna Rao
Secretary
Education Committee

Provisional Secretary

Urgent.

Rs 48-00 H.T. Edu 266-12 Serial 1

Edu 81

OFFICE OF INSPECTOR GENERAL OF EDUCATION IN MYSORE

9177
506

Bangalore 14th February 1913

From M Shama Rao Esq
Offg Inspector General of Education in Mysore

Srinivasiengar Esq
Offg Secretary to the Government of His Highness
the Maharaja of Mysore General & Revenue Departments

I have the honour to forward herewith certain proposals for the opening of a Mechanical Engineering School at Bangalore for the consideration and sanction of Government The whole subject was considered by a Committee informally nominated by the Dewan consisting of myself as President Mr K Srinivas Iyengar Executive Engineer Water Supply and Stores Division as Secretary and Messrs V Rangaswamy Iyengar Superintending Engineer Southern Circle and M G angiah Assistant Engineer Public Works Secretariat I enclose the report of the Committee with a plan and estimates for the building and equipment &c required as well as a preliminary note by Mr V Rangaswamy Iyengar I request that the Government may be pleased to sanction the establishment of a Mechanical Engineering School at Bangalore on the lines mentioned in the report of the Committee

2 The initial cost for Building Furniture Workshop Machines Tools &c Demonstration Models, Motor Car Engines Pumps &c and Library as per detailed estimates enclosed will be Rs 24049 as given in para 4 of the Committee's report and the recurring expenditure as given in para 8 of the same report on the staff Establishment

orkshop

Workshop Expenses and Scholarship to students will be for the first year Rs 15,780, for the second year 17,700 and for the third year Rs 19,620 In the estimate under scholarships, provision has been made for two foreign scholarships of the value of £200 per annum for the study of Mechanical Engineering This amount is the same as given to holders of Damodar Doss Scholarships In addition about £100 ~~for~~ for passages and £25 for kit for each student will also be required as in the case of Damodar Doss Scholars. In granting the scholarships, preference may be given to such of the applicants as are ready to meet a portion of the expenses, say one-third, from their own funds As proposed in para 13 of the Report an extra sum of Rs 1500 may be sanctioned for making advances to students who are unable to find funds at once for purchasing instruments &c The whole of the cost, initial as well as recurring, may be met from the allotment of Rs 60,000 provided in the State Funds Budget for the current year for the Improvement of Industrial Schools

3 The number of admissions to the school will be 50 per annum and the course will extend over three years and the Committee consider that the whole of the staff should be regarded as temporary to begin with and that it is desirable to revise the scale and grade the different appointments and put them on a permanent footing after a period of three years

4 As proposed in para 9 of the report the triangular plot of ground between the Revenue Survey office and the new High School appears to be a suitable site for the school, being near the P W Workshops, and I request that permission may be kindly accorded by Government to have the necessary buildings on this plot of ground

5 As regards the Superintendent, some difficulty may be apprehended to find a competent person at once and in para 14 the Committee have proposed the names of three D P W officers in the order of fitness viz Messrs S Venkata Subba Chetty, Assistant Engineer Ganapathy Iyer, Sub-Assistant Engineer and S Muthusawmy Iyer Overseer I am of opinion that temporarily the services of Mr Venkata Subba Chetty may be lent for being employed as Superinten

and as he will be stationed at Bangalore the Electric Department can utilize his services for short periods if absolutely needed although the arrangement may not be satisfactory in actual working I beg also to propose for the sanction of Government that the same Committee which has now submitted the eport may be appointed to manage the Mechanical Engineering School when started Pending the construction of a building permission may also be accorded as stated in para 12 of the Report to hold the school in the Sir Sheshadri Memorial Hall from where the Sloyd classes have been removed

I have the honour to be

Sir

Your most obedient servant

M Shamanna Rao

Offg Inspector General

LIST OF ENCLOSURES

1 Report of the Committee appointed to consider and submit proposals for starting the Mechanical Engineering school at Bangalore

2 Notes on the proposed school of Mechanics in Bangalore, by Mr V Rangaswamy Iyengar

3 General abstract estimate for the construction of Mechanical Engineering School building at Bangalore

4 Estimate of the probable cost of purchasing furniture for the school

5 General abstract estimate for purchasing machine shop equipment and tools &c , for the above school

6 General abstract estimate of the probable Initial cost of starting the school

7 Plan of the building

8 Site plan for the building

Report of the Committee appointed to consider and submit proposals for start -ing a Mechanical Engineering School at Bangalore

---

1. The Committee having considered in detail the recommendations of Mr V Rangasamy Iyengar as contained in his note dated 4th February 1913 is of opinion that they may be generally - - adopted and a School started from the 1st of April 1913

2 The Committee suggests that the management of the School be vested in the Educational Department assisted by an Advisory Committee

3 The Committee has slightly modi- -fied the estimate framed by Mr V Rangasamy Iyengar which provides for an initial expenditure of Rs 20,000/-

4 The initial cost of the scheme as now recommended amounts to Rs 24,000/- (as per detailed estimates submitted)

5 The number of admissions may be increased from 25 to 50 (40 students and 10 teachers) per annum the number of scholarships being correspondingly in- -creased from 12 to 20

6 It is also recommended that pro- -vision may be made for two foreign

120

Report of the Committee appointed to consider and submit proposals for starting a Mechanical Engineering School at Bangalore.

---

1. The Committee having considered in detail the recommendations of Mr. V Ramaswamy Iyengar as contained in his note dated 4th February 1913 is of opinion that they may be generally - - adopted and a School started from the 1st of April 1913

2 The Committee suggests that the management of the School be vested in the Educational Department assisted by an Advisory Committee

3 The Committee has slightly modified the estimate framed by Mr. V Ramaswamy Iyengar which provides for an initial expenditure of Rs. 20,000/-

4 The initial cost of the scheme as now recommended amounts to Rs 24,000/- (as per detailed estimates submitted)

5. The number of admissions may be increased from 25 to 30 (40 students and 10 teachers) per annum the number of scholarships being correspondingly increased from 12 to 20

6 It is also recommended that provision may be made for two foreign

scholarships of the value of Rs 250/- per month for the study of Mechanical Engineering

7 As much difficulty is experienced at present in getting suitable teachers for the different industrial schools in the Province, provision should be made for the training of such teachers Can--didates for admission to this class must have at least passed the Matricu--lation Examination or its equivalent The course of study will be 3 years

8 The recurring expenditure will be as under:--

1 STAFF

	RS
One Superintendent on	250
One Shop Instructor	100
One Drawing Master	75
3 maistries on Rs 50,40, & 35	125
One Teacher for Class Room	75
Total Rs	625

Allowances to some of the local Engineer Officers of the P W Department for lectures on special subjects 150

Total Rs 775

2 ESTABLISHMENT

1 Clerk	25
2 peons at Rs 7 each	14
2 watchmen at Rs 7 each	14

scholarship of the value of Rs 350/- per month for the study of Mechanical Engineering.

7. As much difficulty is experienced at present in getting suitable teachers for the different industrial schools in the Province, provision should be made for the training of such teachers Can-didates for admission to this class must have at least passed the Matricu-lation Examination or its equivalent The course of study will be 3 years

8. The recurring expenditure will be as under:--

I. STAFF

	Rs
One Superintendent on	350
One Shop Instructor .	100
One Drawing Master	75
3 masters on Rs.50,40, & 35	125
One Teacher for Class Room	75
Total Rs	625

Allowances to some of the local Engineer Officers of the P W.Department for lectures on special subjects.. 150

Total Rs. 775

2 ESTABLISHMENT

1 Clerk .. .	25
2 peons at Rs.7 each	14
2 watchmen at Rs. 7 each .	14

145

	Rs
Brought forward	53
1 sweeper	7
Contingencies	20
Total	80

Total of staff and office establishment . 855 per month

Note - The whole of the staff will be temporary to begin with and it will be desirable to revise the scale and grade the differ--ent appointments and put them on permanent footing after a pe-riod of three years

3 WORKSHOP EXPENSES

including materials required &c: 300 per month

4 SCHOLARSHIPS TO STUDENTS

1st. year	20 students	at Rs 8	160
2nd year	40	—do—	320
3rd year	60	—do--	480

The yearly expenditure will thus amount to as under -

1st year

Staff 855 x 12 or	10,260
Workshop expenses 300 x 12 or	3,600
Scholarships 160 x 12 or	1,920
Total	15,780

2nd.year

Staff and materials as above	13,860
Scholarships 320 x 12 or	3,840
Total	17,700

3rd.year

Staff and materials as above	13,860
Scholarships 480 x 12 or	5,760
Total	19,620

121

		Rs
Brought forward		53
1 sweeper		7
Contingencies		20
Total		80

Total of staff and office establishment . .. . per month	855

Note - The whole of the staff will be temporary to begin with and it will be desirable to revise the scale and grade the differ-ent appointments and put them on permanent footing after a pe-riod of three years

3. WORKSHOP EXPENSE

Including materials required &c: 300 per month

4. SCHOLARSHIPS TO STUDENTS

st. year 20 students at Rs.8		160
2nd year 40	—do—	320
3rd. year 60	—do— .	480

The yearly expenditure will thus amount to as under:-

1st year

Staff 855 x 12	or	10,260
Workshop expenses 300 x 12 or		3,600
Scholarship 160 x 12	or	1,920
Total		15,780

2nd year

Staff and materials as above	13,860
Scholarship 320 x 12 or	3,840
Total	17,700

3rd year

Staff and materials as above	13,860
Scholarship 480 x 12 or	5,760
Total	19,620

9 The Committee considers that the triangular plot of ground between the Revenue Survey Office and the New High School will be a suitable site for the School, being in fair proximity to the P.W Workshops

10 The course of study as per sylla--bus attached may be adopted for the present It may be revised later on if necessary Some slight modification will however be made in the case of "teacher" pupils so as to allow more time say three hours per day for class work Details will be worked out in due course

11. The accompanying plans and esti--mates got up by the Executive Engineer Water Supply & Stores Division, for the School Building and Workshop may be sanctioned

12 As it will take not less than 3 months from date of sanction for the proposed building to be fully equipped and got ready for practical work, sanc--tion may be accorded as a temporary measure for holding the classes in the Seshadry Memorial Hall, temporary arrange--ments being made in the Workshop for practical work

13 Provision has been made in the estimate for the purchase of the neces-

9 The Committee considers that the triangular plot of ground between the Revenue Survey Office and the New High School will be a suitable site for the School, being in fair proximity to the P.W. Workshops

10. The course of study as per syllabus attached may be adopted for the present It may be revised later on if necessary. Some slight modification will however be made in the case of "teacher" pupils so as to allow more time say three hours per day for class work. Details will be worked out in due course.

11. The accompanying plans and estimates got up by the Executive Engineer Water Supply & Stores Division, for the School Building and Workshop may be sanctioned

12. As it will take not less than months from date of sanction for the proposed building to be fully equipped and got ready for practical work, sanction may be accorded as a temporary measure for holding the classes in the Seshadry Memorial Hall, temporary arrangements being made in the Workshop for practical work

13. Provision has been made in the estimate for the purchase of the neces-

necessary Drawing boards, T and Set squares All other instruments should preferably be purchased by the students But as many of them will probably find difficulty in the matter of funds, it id proposed that the amount (which may come to about 35 rupees per student) be advanced by Government in the first ins--tance and recovered from the students in easy instalments A sum of Rs 1,500 may kindly be sanctioned for this pur--pose

14 The Committee will take steps to secure the services of a competant staff for the School But as there may be some difficulty in getting immediate--ly a suitable man for the post of Super--intendent, it is suggested that selec--tion may be made from the three follow--ing names for temporarily filling the place

The names are given in the order of fitness:-

Mr S Venkatasubba Chetty,
Assistant Engineer -

" V Ganapathy Iyer,
Sub Assistant Engineer -

" S Muthusamy Iyer,
Overseer -

All the three have had College train--ing in Mechanical Engineering The 1st has had the advantage of foreign train--ing both in Mechanical and Electrical Engineering

Ta Shanmuga Rao
Chairman
V Ranganathan
Member
S Muthusamy Iyer
Secretary
M Rangaya
Member

necessary Drawing boards, T and Set squares. All other instruments should preferably be purchased by the students. But as many of them will probably find difficulty in the matter of funds, it is proposed that the amount (which may come to about 35 rupees per student) be advanced by Government in the first instance and recovered from the students in easy instalments. A sum of Rs. 1,500 may kindly be sanctioned for this purpose.

14. The Committee will take steps to secure the services of a competent staff for the School. But as there may be some difficulty in getting immediately a suitable man for the post of Superintendent, it is suggested that selection may be made from the three following names for temporarily filling the place.

The names are given in the order of fitness:-

Mr. S.Venkatarubba Chetty,
- Assistant Engineer

" V.Ganapathy Iyer,
- Sub Assistant Engineer

" S Muthusamy Iyer,
- Overseer

All the three have had College training in Mechanical Engineering. The last has had the advantage of foreign training both in Mechanical and Electrical Engineering

SYLLABUS 145

SCHOOL OF MECHANICAL ENGINEERING
BANGALORE

The school will impart instructions in the principles and practice of the following:-

(1). Management and care of — Steam and Oil Engines.

(2) Management, care and erec--tion of machinery and Mill work.

(3). Electrical work including operating.

(4). Care and driving of Motor Cars.

(5). Carpentry inculding cabinet making.

2, There will also be established a special class for training teachers - for Industrial Schools

3. The instruction given will be of such a character that the students will have had a sound and comprehensive edu--cation both in theory and practice, - the practical side predominating.

4 For the present, the number of students that will be admitted to the school will be restricted to 50 every year Candidates for admission should be between 15 and 18 years of age and shall have passed at least the Mysore Lower Secondary Examination unless spe--cially exempted

S Y L L A B U S

SCHOOL OF MECHANICAL ENGINEERING

PATCHAGHE

The school will impart instructions in the principles and practice of the following:-

(1). Management and care of -- Steam and Oil Engines.

(2). Management, care and erection of machinery and Mill work.

(3). Electrical work including operating.

(4). Care and driving of Motor Cars.

(5). Carpentry including cabinet making.

2. There will also be established a special class for training teachers - for Industrial Schools.

3. The instruction given will be of such a character that the students will have had a sound and comprehensive education both in theory and practice, the practical side predominating.

4. For the present, the number of students that will be admitted to the school will be restricted to 50 every year. Candidates for admission should be between 16 and 18 years of age and shall have passed at least the Nyasaland Lower Secondary Examination unless specially exempted.

exempted

5. No fees will be levied, but stu--dents should provide themselves at -- their own cost text books, note-books - and the necessary drawing instruments

6. Workshop tools, drawing boards, T Squares and Set Squares will be provi--ded by the school.

ATTENDANCE:- 7. The hours of attendance will be from 8 A.M. to 12 noon and 2 to 5 P.M. Every Saturday will be a half holiday - The important Government holidays will also be considered as holidays

Out of the daily seven hours of work, five hours will be spent in the - Workshop and the remaining two hours - will be devoted to class and drawing - work

SESSION OR TERMS:- 8 The session or year commences on first Monday in July and will consist - of two terms The first term commences on the first Monday in July and ends on the 24th of December The second term commences on the 5th of January and ends on the 30th of June

COURSE:- 9 The course will extend over 3½ - years in the case of Branches 1, 2, & 5 (the last six months being a sort of practical course in one of the Pumping Stations or where large works are in -- progress) and 2½ years in the case of

Branches

exempted.

5. No fees will be levied, but students should provide themselves at their own cost text books, note-books and the necessary drawing instruments.

6. Workshop tools, drawing boards, T Squares and Set Squares will be provided by the school.

ATTENDANCE:- 7. The hours of attendance will be from 8 A.M. to 12 noon and 2 to 5 P.M. Every Saturday will be a half holiday The important Government holidays will also be considered as holidays.

Out of the daily seven hours of work, five hours will be spent in the Workshop and the remaining two hours will be devoted to class and drawing work.

SESSION OR TERMS:- 8. The session or year commences on first Monday in July and will consist of two terms. The first term commences on the first Monday in July and ends on the 24th of December. The second term commences on the 5th of January and ends on the 30th of June.

COURSE:- 9. The course will extend over 3½ years in the case of Branches 1, 2, & 5 & the last six months being a sort of practical course in one of the Purping Stations or where large works are in progress) and 3½ years in the case of Branches

Branches 3 and 4

EXAMINATION:- 10 An examination will be held year-
-ly at which students who have put in -
the full course will be allowed to sit
The examination will cover all the sub-
-jects of the course and comprises both
written and practical

Students who qualify themselves
and obtain not less than 30 per cent in
any one of the subjects and 50 per cent
in the aggregate will be given a Diploma
(after the completion of the practical -
course).

A student who fails to secure a
pass at the first sitting may be allow-
-ed a second time and no more. But if
he is found to have acquired average pro-
-ficiency, he may be given a certificate
instead of a Diploma and be allowed to -
undergo the six months practical course

APPLICATION FOR ADMISSION:-11. Application for admission which
shall be in the candidate's own hand-
writing must be made on or before the -
first week in June on forms which can -
be obtained from the Superintendent -
The application should be accompanied by
two certificates (1) Certificate of age
from parent or guardian that the appli-
-cant is between the years 15 and 18,
(2) Certificate of character from the -
Head Master of the School in which he -
was studying last testifying to his ge-
-neral

Branches 3 and 4.

EXAMINATION:- 10. An examination will be held yearly at which students who have put in the full course will be allowed to sit. The examination will cover all the subjects of the course and comprises both written and practical.

Students who qualify themselves and obtain not less than 30 per cent in any one of the subjects and 50 per cent in the aggregate will be given a Diploma (after the completion of the practical course).

A student who fails to secure a pass at the first sitting may be allowed a second time and no more. But if he is found to have acquired average proficiency, he may be given a certificate instead of a Diploma and be allowed to undergo the six months practical course.

APPLICATION FOR ADMISSION:- 11. Application for admission which shall be in the candidate's own handwriting must be made on or before the first week in June on forms which can be obtained from the Superintendent. The application should be accompanied by two certificates (1) Certificate of age from parent or guardian that the applicant is between the years 15 and 18, (2) Certificate of character from the Head Master of the School in which he was studying last testifying to his general

general good behaviour while in the - school.

COURSE OF STUDIES - BRANCHES 1 & 11:- 1. (1) Management and care of Steam and Oil Engines and (2) Management, care and erection of machi--nery and Mill work:-

1 Mathematics - Arithmetic, Algebra, Euclid, Mensuration (Matriculation Stan--dard)

2 Science - Elements of physics and Chemistry (Matriculation Standard)

3 Drawing.- Geometrical, Machine and Freehand and Elementary Building Drawing and Isometric projection

4 Estimating - Estimating of simple - structures and Machines

5 Applied Mechanics - Strength of mate--rials and designing of simple structures and machine parts Graphic statics

6 Elements of Mechanism - Description of the ordinary machines such as Lathes, Drills &c and Workshop appliances &c

7 Materials of construction - Building materials (timber, stone, lime and ce--ment), brass, iron and steel, paints - and varnishes.

8 Steam, Oil & Petrol Engines - Proper--ties of steam, various kinds of fuel,

theory

general good behaviour while in the school]

COURSE OF STUDIES:- BRANCHES I & II:- Is (1) Management and care of Steam and Oil Engines and (2) Management, care and erection of machinery and Mill work:-

1. Arithmetic.- Arithmetic, Algebra, Mensuration (Matriculation Standard).

2. Science.- Elements of physics and Chemistry (Matriculation Standard).

3. Drawing.- Geometrical, Machine and Freehand and Elementary Building Drawing and Isometric projection.

4. Estimating.- Estimating of simple structures and Machines.

5. Applied Mechanics.- Strength of materials and designing of simple structure and machine parts. Graphic statics

6 Elements of Engineering.- Description of the ordinary machines such as Lathes, Drills &c and Workshop appliances &c

7. Materials of construction.- Building materials (timber, stone, lime and cement), brass, iron and steel, paints and varnishes.

8. Steam, Oil & Petrol Engines.- Properties of steam, various kinds of fuel, theory

theory of internal combustion engines, gas producers, suction gas engines, des--cription of various types and parts of engines (Oil and Steam).

9 Pumping & Pumping Machinery - Rudi--ments of hydraulics, description and working of various types of pumps, cal--culation of discharge and efficiency

NOTE:- Students taking Branch 1 will - spend the last six months of their - - course in one of the Pumping Stations and those taking Branch 11 in the Work--shop

BRANCH III:- ie Electrical work inclu--ding operating:-

1 Mathamatics - as per Branches 1 and II

2 Science.- do

3 Drawing - do .

4 Applied Mechanics - Strength of ma--terials and graphic statics

5. Elements of Mechanism - Same as for Branches 1 and II.

6 Materials of construction - Same as for Branches 1 and II

7 Electricity & Magnetism - Electrical units

units, production of currents by induc--tion, dynamo, alternators and transfor--mers Incandescent and arc lamps, - electrolysis, electro-plating, elements of telegraphy and telephony, storage - battery

8 Laboratory work - Electrical mea--surements, testing of instruments and motors.

BRANCH IV:- ie Care and driving of Motor Cars -

1. Mathematics - Arithmetic and Mensu--ration

2. Science.- Same as for Brnaches 1 & II

3 Drawing.- Same as for Branches 1 & II except building drawing

4 Applied Mechanics - Strength of ma--terials and designing of simple machine parts

5 Elements of Mechanism - Same as for Branches 1 and II

6 Materials of construction - Brass, iron and steel Paints and varnishes

7 Steam, Oil & Petrol Engines - Same as for Branches 1 & II excepting gas produ--cers and suction gas plant.

8 Motor Cars.- Different types, their construction and management

BRANCH V - ie Carpentry including Cabi--net making -

1 **Mathematics.**- Arithmetic and Mensu--ration

2 **Science** - Same as for Branches 1 & II

3 **Drawing** - Geometrical, freehand, - elementary building drawing, isometric projection

4. **Estimating** - Estimating of simple structures and different classes of fur--niture

5 **Applied Mechanics.**- Strength of ma--terials and designing of simple struc--tures

6 **Elements of Mechanism** - Same as for Branches 1 and II

7 **Materials of construction.**- Timber, brass, iron, and steel, paints and var--nishes

8 **Carpentry.**- Joints, scaffs, trussed and built up beams, roofs, floors, par--titions and stair-cases

9 **Cabinet making** -

****

NOTES ON THE PROPOSED
SCHOL OF MACHANICS
IN BANGALORE

****

This has not been printed

"SOME NOTES ON THE PROPOSED SCHOOL OF MECHANICS IN BANGALORE"

It is proposed to start in Bangalore, a school for imparting training in the Mechanical Arts so as to create a body of men, who will be possessed of an amount of industrial intelligence and capacity to understand the why and the wherefore of their daily vocation

It is not however proposed to carry the theoretical training to such an extent, as has been generally accepted as necessary in Institutions of this kind The following extract of "Report on the enquiry to bring Technical Institutions into closer touch and more practical relations with the employers of labour in India by Col Atkinson, R E ", will perhaps be interesting and may be useful -

"The type of man that is wanted is one who has been grounded both practically and theoretically in the profession he has chosen, a very large amount of stress being laid on the practical and who is prepared to go out

and

work in the most subordinate grade and gradually work himself up into a position of trust and authority"

"The education should be one (1) essentially practical and covering as wide a ground as possible, (2) of such a character that it is capable of being applied commercially, (3) the theoretical portion should be complete enough to enable the student to reason for himself in a difficulty and to act in his own initiative in case of emergency, (4) the working conditions should be so exacting that the transition from educational to practical life is not so great as to cause a desire to slack work"

"It must be recognised that it is the work a practically trained student will do and not his general knowledge for which an employer is prepared to pay We must therefore carefully avoid what one sees too much in this country , of people who hope by a study of theoretical science to develop into efficient managers of practical concerns"

"It is hoped that the Institution proposed to be started in Bangalore will come up to the ideal as far as possible, and train a body of men who will find

ready employment when they leave school

"Mr Atkinson also observes that "there is a very large opening for the employment of men in Mechanical and Electrical Engineering, who after training in a properly equipped Institute, are willing to gain practical experience by apprenticeship on a living wage, work with their hands and observe factory hours and rules"

2 "The best method of training men in Mechanical and Electrical Engineering to meet the existing demand is by a course at a well equipped Institute, followed by an apprenticeship in works"

3 "The education given in the Institute should be essentially practical, be capable of being applied commercially, and not of such a high scientific character as is often considered necessary in the West"

"The system pursued by the General Electric Company is described thus

"It is based on the broad principle of correlating the training of the hand with the development of the mind in the effort to obtain skill and intelligence"

"The Company takes students from 15 to 20 years of age who have had at least Grammar School Education or its equivalent and are physically sound"

"The course comprises training as Mechanics, Tool-maker and Pattern maker and moulder and extend over 4 years"

"Apprentices with an advanced education are given an adequate allowance of time"

"All accepted applicants must serve a trial period of two months and only those who show a mental and moral make-up that gives hope of developing intelligent and well dispositioned journeymen are permitted to continue in the School"

"The Company gives wages for all apprentices so as to make the boys self-supporting during this period"

Keeping well in mind these fundamental principles on which the course of instructions should be based, a curriculum is suggested for adoption in the case of the proposed Institution in Bangalore, but it must be distinctly understood that the proposals are not by any means final and that the evolution of a perfect syllubus is a work of time

It may be stated in the onset that the system now proposed is based somewhat on the apprenticeship system of the General Electric Company of America, suitably modified to meet the local wants and conditions

The training of the students in that Institution is conducted in two stages, the first stage in what is called 'The Training Room' and the second stage in the regular factory

The training room is devoted entirely to the preliminary practical training of the apprentices It is under the direct charge of an official who is specially qualified for the difficult task of teaching

An arrangement also exists whereby "Such instructive commercial work could be transferred from the factory into the Training Rooms from time to time as the development of the apprentices might require"

In our case, the factory will be the Government Workshops and the training room will be proposed school and suitable arrangements will be made for the transfer of the actual work from the workshop to the school

As the volume of work in the Public Works Workshop, is not always large, it may be necessary to embark on a system of manufacturing articles in a small way, with the main view of affording suitable work for the students of the school Such articles may or may not have commercial value, at any rate in the beginning The cost of their production may have to be written off against the maintenance of the school, but as time advances and the Institution develoues, it will be possible to keep this item of charge quite low by turning out works, especially by the more advanced 3rd year students, that will find a sale in the market I lay particular emphasis on this fact, for I have known cases where efficiency has been sacrificed under the mistaken notion that the school must be conducted on commercial principles

Below is a rough list of articles that may be manufactured for which a ready market can be expected in the Mysore province and the neighbouring Districts -

1 Small engines- steam and oil
2 Centrifugal pumps up to 2" diameter
3 Common hand pumps (rotary and piston)

162

4 Sugar-cane Mills
5 Garden implements and ploughs
6 Coarse cutlery
7 Spikes and nails
8 Horse shoes
9 House fittings such as hinges, bolts and handles (in brass and iron)
10 Standard weights and measures
11 Furniture (in wood)
12 Pad-locks (iron and brass) and many others that will suggest themselves in course of time

The combination of the school with the P W D Workshop minimises to a very large extent unproductive work by the students and any further attempt made to increase revenue should not be made at the sacrifice of efficient methods

The school will be equipped with such tools and appliances as are necessary for the preliminary training, a small library should also be added in course of time

The tools and appliances need not necessarily be up-to-date and costly as they are to be handled by only inexperienced boys It will be a very good experience for the boys to repair old machines and tools and make them serviceable

But it is very important that the training imparted is such as to impress on the minds of the pupil, those qualities that go to make an efficient workman, such as thoughtfulness, self reliance, punctuality, accurac , &c

It is therefore essential that the selection of the Superintendent should be made with the greatest care as ultimate success of the school will be, to a very large extent in direct proportion to the existence of those special qualities in him

In the training room, every boy will be un er the direct supervision of the Superintendent, who should gauge the boy's mental capacity, his native ability to do work and his general character, no schedule of time on the different machines must be laid out The apprentice will be required to stay on one machine and one operation until he has proved his capacity to perform the specific work with accuracy and fair degree of speed Some apprentices may take a year and a half and others double that time In due time the apprentices will be transferred to the workshop and engaged on regular work

While in the workshop they will be subjected to the discipline of the shop foreman But as it is not likely that the shop foreman will either have the time or inclination to devote much time with the boys, it will be necessary for the success of the scheme to have an official styled the Shop Inspector who gives his entire time to looking after the apprentices, while working in the workshop

He instructs the boys at their trade and sees that they are changed f from one class of work to another, in accordance with the apprentice schedules In changing the apprentices about, the instructor consults with the various foremen, studying the situation carefully, in order to have as little friction as possible in making the changes and so as not to interfere too greatly with the efficiency of any one department of the workshop His suggestions, must of course, be approved by the Shop Superintendent before they go into effect

It will be seen thus that the Training Room Sup rintendent and the Shop Instructor are the two principal officials in whose hands lie the destinies of the Institution

While the Training Room superintendent will be responsible for the development of the boys in the early stages, the shop instructor plays an important part in giving a finish to the training by impressing upon the minds of the students, the general principles affecting their work and the solution of many shop problems that arise in every day practice

He must be a man with a good deal of patience and who takes genuine interest in the boys and must have a sufficient all round knowledge of machines and be able to convey his ideas so that the boys may readily understand

I have gone to some length in enunciating the qualification of these two individuals the Training Superintendent and the Workshop Instructor, for the success of the whole scheme depends a good deal in getting the right man for the right place

In the Training room of the Gen ral Electric Company, it is stated that a "Method has been adopted under which apprentices are given frequent opportunities to act as temporary Instructors Accordingly each apprentice during his various stay in the Training Room must help to instruct a less

advanced apprentice in the operation which he himself has already mastered"

It is reported that this system has worked remarkably well and had very good effect in stimulating ambition and interest in work

It is also stated that under the 'Boy Teacher and the Boy Pupil system' only 3 journey-men Instructors are required in the Training Room for about 100 apprentices This system may well be given a trial in our school and every endeavour made to make it as successful in its working as it has been found in the case of the General Electric Company So much as regards workshop practice and now for the theoretical training by lectures and demonstrations in the class room, It should be the aim of the teacher, "to confine himself as far as possible to the explanation of principles through practical problems and to this end select problems from among the occurrences of daily workshop life"

Through practice to theory should be the guiding principle in the educational work Every problem in mathematics, physics or technology should be made to have some bearing on something with which the boy is familiar in connection with his work

New principles may be introduced gradually and the problems grow more difficult as they begin to illustrate higher principles of Algebra Geometry Physics, elementary mechanics, &c

Too much importance cannot be attached to instruction in practical drawing as ability to read drawings quickly and intelligently can only be obtained as a result of thorough grounding in the early stages

It is proposed to make provision in the school for the training of men in the following branches including more or less filing, fitting, smithy and foundry work -

1 Engine driving, - Stationary & portable steam and oil engines

2 Fitting and erecting machinery, such as engines, pumps, &c

3 Electric fitting and operating

4 Care and driving of petrol-engines and Motor cars

5 Carpentry (in all its branches)

Admission to the school will be restricted to students who have passed

at least the Lower Secondary Examination and who are between 15 to 18 years of age unless exemption is given

The period of training will be 3½ years in the case of 1, 2 and 5 and 2½ years in the case of 3 and 4 branches

1,2 & 5 - The period of 3½ years will be distributed as follows -

The first 18 months in the School or training room, the second 18 months in the workshop and the last 6 months in outside practice in one of the pumping stations or where large works are in progress

3 & 4 - The first 18 months will be spent in the school and the last 12 months will be a practical course which in the case of Electric Fitters will be spent in some outdoor work in the Electric Department and in the Government Motor Garage in the case of Motor Drivers

For the present the maximum number of students that may be admitted during any one year will be restricted to 25 in all, distributed in groups of 4 to 8 under the several branches

The hours of attendance will be from 8 to 12 a m and 2 to 5 p m Out of these five hours will be devoted to shop work and 2 hours to class or theoretical work

In the class room instruction will be given in the following subjects -

Drawing, Estimating, Elementary Mathematics, elements of machine design, elementary applied mechanics materials of construction, construction and working of (1) petrol motors (2) steam engines, (3) oil engines, (4) electric motors, pump (lift, force and centrifugal)

As it is proposed to start the school and bring it into working order as early as possible, we cannot wait for a pukka building, but make such arrangements as possible by means of temporary sheds till such time as suitable premises are found It goes without saying, of course, that the school should be located somewhere in the neighbourhood of the D P W Workshop A suitable location for the erection of sheds will be in the triangular bit of ground situated between Electrical Engineer's office and the New High School

If necessary a better site can be found by shifting the stores of the Imperial Lancers to Munireddipalya where I am told, it will not be difficult to find suitable buildings, at any rate, for storing the major portion of the stuff

It looks anomalous that the Lancers should have the lines at Munireddipalya and their stores 3 miles away in the midst of Public Buildings to the inconvenience of the surrounding offices and institutions

The question of shifting the workshop of the Transport Corps which is situated at the back of this building is, however, not essential so far as the school is concerned, but I am strongly of opinion that its proper location is in the lines near the Railway station where there is ample room for the same I am encouraged to make this recommendation as Mr Srinivasaiengar, Executive Engineer, Water Supply and Stores Division has given me to understand, that the Sup rintendent of the Transport Corps informed him that he would gladly welcome such an idea provided the necessary buildings are erected for his use

The question of shifting the Military Stores and the Workshop has been in contemplation for good many years since the new Lines were constructed and it appears to me that the time has now come when further delay is undesirable, considering that the realisation of so many laudable schemes are hampered by its existence in its present location

If it be decided to start the school in a plain unpretentious premises calculated to suit present requirements, I estimate that the rough initial cost will be as follows -

1	Erection of a workshop to accommodate 25 or 30 students, a hall 30 feet by 50 feet will probably suffice	Rs 3,000
2	Class room, stores and library, &c	4,000
3	Workshop equipment such as, tools, benches, lathes, drills, &c	7,000
4	Furniture	1,000
5	Demonstration models	2,000
6	Motor car for demonstration purposes	2,000
7	Engines and pumps (these can be sent from the General stores)	nil
8	Library	500
	Total	19,500

or say Rs 20,000 in round numbers

172

If a suitable building can be provided, the initial cost can be reduced to Rs 15,000

As regards recurring expenditure, I estimate it as follows -

STAFF

	Rs
One Superintendent on	250
One Shop Instructor on	100
One Drawing Master on	75
3 Maistries on Rs 50 40 and 35	125
One Teacher for Class Room	75
	625

Lectures in special subjects which will be delivered by some of the local engineers of the P W Department, for which they will be given some special allowance (lumpsum of) 150

OFFICE ESTABLISHMENT

One clerk on	25
2 Peons at Rs 7 each	14
2 Watchmen at Rs 7 each	14
1 Sweeper on	7
Contingencies	20
Total Rs	80

Total of staff and office establishment 850 per month

P T O

173

Note - The whole of the staff will be temporary to begin with and it will be desirable to revise the scale and grade the differ ent appointments and put them on permanent footing after a period of three years

Workshop expenses including materials required, &c , Rs 300 per month

SCHOLARSHIP TO STUDENTS

1st year	12	students
2nd year	24	"
3rd year	36	"

at Rs 6 - 10 each

The yearly expenditure will thus come to-

1st year -		Rs
Staff	855 x 12 or	10,260
Materials	300 x 12 or	3 600
-> Scholarship	96 x 12 or	1,152
	Total	15,012

or say Rs 15,000

2nd year -

15,000 + 1 152 or 16 152

3rd year -

16 152 1 152 or 17 304

149

SUMMARY

The School will impart training both theoretical and practical in Engine Driving, Mechanics, Electric Works, Motor Driving and Carpentry

2 The training will be essentially of a practical nature, the theoretical side being restricted to absolute requirements only

3 The preliminary course of training will be in the school and the advanced course in the Government Workshops

4 Twentyfive students yearly will be admitted to this class

5 The course will be (1) 3½ years for engine driving, mechanics and carpentry, (2) 2½ years for electric work and motor driving respectively

6 12 scholarships of the value of Rs 8 each will be awarded every year

It is estimated that the initial cost will amount to Rs 20,000

The recurring expenditure for the first three years will be respectively

Rs 15,000, 16,152 and Rs 17,304

Thus it has been shown that a good beginning can be made in Bangalore by way of starting school for training mechanics at an initial expenditure of Rs 20,000 23000 and an annual recurring expenditure of Rs 15,000 to 17,000 All further details regarding the board of control the framing a syllabus of studies, &c , can be easily worked out, if the present proposals are duly approved

V Rangasamy Iyer

Superintending Engineer,

Southern Circle

Bangalore,

4th February 1913

Memorandum on the establishment of Commercial Classes in Bangalore

176

----xxx----

The need for Commercial Education in India is gradually growing in intensity at any rate on the part of the thinking portion of the population Till a few years ago before the development of the existing world-wide facilities of travelling and transport commercial transactions were simple and needed no special training Dr Buchanan who visited Mysore in the year 1800 wrote that the maximum distance to which paddy was carried was only 60 miles Similarly several other articles from Mysore were not carried beyond the present limits of the Madras and the Bombay Presidencies These days however the oil seeds of Arsikere and other parts are easily carried to the ports of France, and the cocoanuts of Tiptur and other taluks find an easy sale in the markets even at the foot of the Himalayas Hitherto the talk has more or less been on the development of industries but it must be acknowledged that unless commercial knowledge marches hand in hand with the growth of raw-material and the increase of manufactured articles there can be no uniform or assured progress for the country How little commercial knowledge has as yet attracted attention is clear from the fact that in the Quinquennial Report on Education for 190[illegible]-7 the total number of Commercial Institutions for all India is mentioned as being only 12 of which 2 were maintained by Government 2 were aided institutions 7 were unaided, and 1 was supported by a Municipality Even at the present time there are as stated in the recent Resolution of the Government of India on the Educational policy only 2 ~~xxx~~ institutions of Commercial Education 3 of which are under the management of Government

The standard attained it is also stated in a majority of these institutions is not high and the instruction given in them prepares for clerical duties in Government and business offices rather than for conduct of business itself In the Mysore State in the year 1911-12 there were only 3 Commercial schools of which 2 received aid from Government and 1 was unaided Of these 3 institutions, in the Aided Institution maintained by Mr Lakshminaranappa at Bangalore, were taught the subjects of Book-keeping and Accountancy Correspondence and office Routine Short-hand Banking and Currency Type-writing Commercial History and Geography Commercial Law and Esperanto This school prepares pupils for the Public Examinations held by the Madras Government London Chamber of Commerce Birmingham Union of Institutions London National Union of Teachers Institute of Commerce &c The Aided Hardwicke Commercial School at Mysore teaches Type-writing Short-hand and Book-keeping and prepares pupils for the Madras Government Technical Examinations and the Examinations held by the National Union of Teachers London The unaided Commercial School known as the Friends' Union Commercial Institute was started only last year in Siddicutta Bangalore This institution also teaches Short-hand Type-writing and Book-keeping

2 Considering however the experimental stage in which Commercial Education is still at present in the Western Countries of the world the smallness of Commercial Institutions in India need not be felt as disappointing In the United States of America the real history of Commercial Education is said to have begun only from the year 1892 Germany the advance became marked since the latter part the last century especially since 1887 England is ever

now far behind in Commercial Education France is said to have a few old and well established schools of Commerce though as yet the system is not very extensive In Japan the first Commercial School was established in 1875 by a body of private individuals which has now developed into the Tokio Higher Commercial School or College whose graduates, it is stated occupy at the present day the foremost positions in the Commercial world of Japan The following extract taken from a recent publication puts the whole case for Commercial Education in a nut-shell -

"Commercial Education is now generally understood to include all education which prepares specifically for business careers It is no longer limited to the narrowly technical or practical training which fits the students to perform the various operations that are necessary in the exchange of commodities but it is generally taken to exclude the training that prepares for the work of production With the practical training there is usually associated a certain amount of the liberal or cultural element of education

Recognition of this branch of education has been somewhat tardy and can hardly be said to be complete even now One reason for this is obviously the fact that a century ago the transaction of business was a simple matter compared with the complexity of our present organization Commercial life itself was not very highly developed and was indeed considered too humble a form of activity for the exercise of great talents or for any special preparation All this has been changed now Commerce has so extended its sphere and has so developed its organism that it has become the field for the greatest intellects Thorough preparation for it has become recognised as necessary though there are still great divergences of opinion as to the form this pre-

preparation should take "

3 In the light of what is contained in the above para neither explanation nor apology is needed for creating facilities at once for Commercial Education in Mysore, especially when we have a well thought-out scheme ready to hand contained in the Report on Technical Education in Mysore prepared by the Committee appointed in Government Order o 3585-9/Edn 462-09-2 dated 28th October 1910 In this Report it is proposed to make provision for higher Commercial training in the College of Technology to be established in Bangalore, and for Secondary Commercial Education and lower commercial education in other institutions as regards higher commercial education it is doubtful if at once facilities should be created Such facilities may be needed a year or two hence when the College of Technology becomes fully established and when the Elementary and Secondary Commercial Schools or classes develop In the meanwhile the Aided Commercial High School maintained by Mr Lakshminaranayya may be utilized for the training of teachers as far as possible A syllabus however for Higher Commercial courses has been prepared by Mr V Subramanya Iyer in consultation with Mr Lakshminarayya and may be readily adopted when necessary

4 For Elementary and Secondary Commercial education however classes may at once be started in the building of the Government High School Bangalore under the supervision of a Committee consisting of the Inspector General of Education as President Mr V Subramanya Iyer Head Master of the High School as Secretary and Messrs J S Chakravarti V Rangaswami Iyengar D Venkataramaiya C Krishna Rao B K Garudachar and Marianna as members

Subjects to be taught - For the Elementary course the subjects to be taught will be Correspondence and Office Routine Book-keeping Type-writing Commercial Arithmetic Commercial Geography Hand-writing and Penmanship Commercial Morality and one Language English Tamil Telugu Marratti or Urdu the standard in Language being limited to ~~the~~ enable the student to acquire sufficient knowledge for simple composition and conversation For the Secondary course in addition to the subjects mentioned for the elementary course there should be included Estimates of Costs Short-hand ~~prices~~ precis-writing and Indexing Banking and Currency Political Economy Commercial Law Office Practice and knowledge of wares Draft syllabuses for each of these courses drawn up by Mr V Subramanya Iyer in consultation with Mr Lakshminaranayya ~~is~~ are also ready for adoption

Pupils for Admission - The pupils seeking admission into these Commercial classes may be taken to be regular students studying for the Elementary courses (2) regular students ~~students~~ studying for the Secondary course and (3) students of the High School Forms taking up one of the Commercial subjects under the School Final Scheme It is desirable also to maintain an Elementary Commercial class imparting instruction in the Kannada Language for the benefit of petty merchants and small traders and those associated with them in business In the case of the regular students for the Elementary course, the minimum qualification for admission should generally be the Lower Secondary Examination and in the case of those seeking the Secondary course the completion of the course of the IV Form of a High School

The Elementary course may extend over one year and the Secondary course over a second year The number of

hours

be annas 8 a month and for the Secondary course Re 1/- a month It should however be open to the Board of management to grant exemptions in the case of deserving students for the next 2 years In the case of students seeking instruction in the Vernacular, the Board may levy a uniform fee the rate not exceeding 4 annas a month for the next two years In the case of those attending special courses a uniform fee of Rs 10 per annum may be levied The students of High School Forms who optionally study one of the subjects mentioned in group C of the School Final Course may be exempted from the payment of any extra fee as they pay for their general education in the High School

Cost - In a sphere where sufficient data cannot be gathered to make fairly accurate calculations, the amounts given under cost may be taken to be very rough estimates Towards the initial charges a sum of Rs 6 000 will be needed distributed as below -

Typewriters	Rs 3 000
Books	Rs 700
Files and other apparatus	Rs 1 000
Furniture and other equipments	Rs 1 300
	Rs 6 000

Recurring charges -

	Per Annum
3 teachers for Commercial subjects 1 on Rs 75 1 on Rs 60 & 1 on Rs 40	Rs 2 100
5 Language teachers 1 English (Rs 30) 4 Vernacular (Rs 25 each)	Rs 1 560
1 clerk on Rs 30 1 attender on Rs 12 and 3 peons on Rs 9 8 and 7 respectively	Rs 792
Contingencies such as light for night classes ribbon paper &c	Rs 500
Allowance to the Secretary	Rs 360

be annas 8 a month and for the Secondary course Re 1/- a month It should however be open to the Board of management to grant exemptions in the case of deserving students for the next 2 years In the case of students seeking instruction in the Vernacular, the Board may levy a uniform fee the rate not exceeding 4 annas a month for the next two years In the case of those attending special courses a uniform fee of Rs 10 per annum may be levied The students of High School Forms who optionally study one of the subjects mentioned in group C of the School Final Course may be exempted from the payment of any extra fee as they pay for their general education in the High School

Cost - In a sphere where sufficient data cannot be gathered to make fairly accurate calculations, the amounts given under cost may be taken to be very rough estimates Towards the initial charges a sum of Rs 6 000 will be needed distributed as below -

Typewriters	Rs 3 000
Books	Rs 700
Files and other apparatus	Rs 1 000
Furniture and other equipments	Rs 1 300
	Rs 6 000

Recurring charges -

	Per annum
3 teachers for Commercial subjects 1 on Rs 75 1 on Rs 60 & 1 on Rs 40	Rs 2 100
5 Language teachers 1 English (Rs 30) 4 Vernacular (Rs 25 each)	Rs 1 560
1 clerk on Rs 30 1 attender on Rs 12 and 3 peons on Rs 9 8 and 7 respectively	Rs 792
Contingencies such as light for night classes ribbon paper &c	Rs 500
Allowance to the Secretary	Rs 360
	Rs 5 312

Honoraria for Special courses of instruction	Rs 1000
Towards the pay of 2 substitutes to be employed for 2 graduate teachers in Government High Schools to be deputed for Commercial instruction at the rate of Rs 50 a month each and towards their fees at Rs 200 for the teachers together	Rs 1400
	Rs 7712

The recurring cost provided in the Report on Technical Education in Mysore is about Rs 4800 per annum for the Elementary and the Secondary Courses together The whole of the establishment is to be regarded as tentative for two years

6 In conclusion the aim should be to gradually establish a coherent system of Commercial Education in the State for Elementary Secondary and advanced courses and to enlarge the vision of those engaged in commerce to regard it as not merely an internal or individual matter but as a matter of world-wide scope and concern for the society

24 Feb 1913

B R Ramanna Rao

Offg Inspector General

V 154

PRELIMINARY REPORT

ON THE PROPOSED

CHAMARAJENDRA TECHINICAL INSTITUTE IN

MYSORE

CHAMARAJENDRA TECHNICAL INSTITUTE

- MYSORE -

Preliminary report on the proposed Chamarajendra Technical Institute in Mysore

The Committee appointed by Government in their order No 3585-9 Edn 462-09-3, dated 28th October 10 has formulated a scheme for the proper working of the Chamarajendra Technical Institute at Mysore The details of that scheme ~~is~~ are to be found in pages 8, 9 and 10 of the report According to that scheme, it was proposed to amalgamate the existing Engineering and Industrial Schools in the City of Mysore and locate the combined institution in the new building under progress

2 The Committee recommended that the Institute should consist of three sections -

(1) Elementary Engineering including Architecture

(2) Technical

(3) Industries and Crafts

3 The Committee ~~has~~ also recommended in para 46 of the report that attached to the Institute there should be a Workshop managed on commercial lines so as to afford training to the students under factory conditions

4 Present proposals - For the present it is proposed to start at once with the Engineering and Industries and Crafts Sections

5 As there is already an Art Section where students are taught painting and drawing as a fine art, it is proposed to continue that section as well

6 A class ~~of~~ for commercial subjects such as Book-Keeping, Business Correspondence, Shorthand, Typewriting and Banking will also be popular if one be started

7 The Chamarajendra Technical Institute may thus consist of the following sections -

(1) Engineering Section
(2) Industrial Section
(3) Fine Arts Section
(4) Commercial Class
(5) Workshop

8 It is expected that the building will be ready by the end of June, but arrangements have been made to get one half of the building ready earlier, so that if orders are passed, it will be possible to shift the Industrial School to the new building by about the end of May and the Engineering School in June

9 The management of the School will be vested in a Committee, composed of the following members -

PRESIDENT

Inspector General of Education

MEMBERS

(1) Superintending Engineer, S Circle
(2) Executive Engineer, Mysore Division
(3) Mr F ~~B~~ Quinton Anderson, ~~B~~ A ,
(4)

10 It will be necessary to have ~~also~~ a Se--cretary for the Committee who should be given a clerk to attend to the correspondence &c

The Committee should meet regularly once a month and dispose of all questions that may - arise from time to time

It will be the business of the Committee to carefully scrutinize the expenditure of the - different sections, revise and remodel the cur--riculum from time to time as experience may dic--tate and make the necessary arrangements for - conducting the examinations in various sections and grant diplomas In short the Committee will perform all the functions necessary for the well being of the Institution and its improvement day after day

11 It will be a great advantage if a Fostel can be attached to the Institute, but the Govern--ment may not, in all probability, feel inclined to incur any additional expenditure at this -- stage, nevertheless request is made with a hope that when funds permit, Government may be pleased to sanction its construction

V Rangaswamy Iyer

19 3 13
Bangalore

188

CHAMARAJENDRA TECHNICAL INSTITUTE

- MYSORE -

Engineering Section.-

With effect from the 1st July 1913, it is proposed to shift the School to the new Chamarajen-dra Technical Institute, where it will be run as one of the Sections of that Institution

The Workshop of the Industrial Section will be utilized for imparting a certain amount of prac-tical training to the students in Mechanics

The constitution of the school, is defined in Government Notification No D / 3 of 7-7-1903 It occurred to me that the rules etc therein con-tained may, with advantage, be modified to a cer-tain extent and with that view Mr B C Sreenivas Iyengar, Head Master of the Engineering School , was asked to submit a memo on the subject A copy of that memo is herewith submitted with my margi-nal remarks

The following are the changes contemplated in the ~~construction~~ constitution and working of the school -

(1) That the minor subordinate classes ~~to~~ be abolish-ed

(2) That the fee to be paid by the students ~~to~~ be reduced to RS 2/- per month, both for the first and the second year

(3) That Government supply Drawing Boards and T-Squares and Set-Squares, the necessary drawing - instruments

instruments and books being procured by the stu--dents themselves

(4) That drawing instruments and books be pur--chased and supplied to the poorer students by - the Government and their value recovered in -- small instalments

(5) That X'mas vacation be reduced to only 10 days

(6) That students need not be compelled to ap--pear for the Madras Technical Examinations

I would also recommend that during the - time the students undergo practical training , - which should be made compulsory, a subsistence - allowance of RS 15/- may be paid to each student, to enable him to meet the extra expense inciden--tal to this course Otherwise there is no -- doubt that students will try to shirk the practi--cal course which is quite as important if not - more than the school course

If the above views are accepted by the - Government and the Committee for the management - of the Chamarajendra Technical Institute be ap--pointed, the whole subject of the rules and cur--ricula of the school will be revised wherever - necessary and a comprehensive report submitted to Government for approval

I understand that certain proposals have already been made by another Committee, but it - may be advantageous to see what the new Committee have got to say before Government finally passes orders on those recommendations

190 ~~166~~

CHAMARAJENDRA TECHNICAL INSTITUTE

- MYSORE -

Some suggestions regarding alterations in the -- working of the existing Engineering School by Mr B C Sreenivasaiengar (Head Master)

---

1 Staff -

At present the Head Master is an Assistant Engineer lent from the P W Department The other masters are theoritical men with no practical ex--perience in works One however (ie) the first Assistant has passed in all the highest grades of different Engineering subjects in the Madras Govt Technical Examinations, the other being merely a man who passed out of the Engineering School with no practical training This state of affairs - greatly affects the nature and efficiency of teach -ing In the Madras College of Engineering, the principal teachers are sent from the D P W and - taken back periodically or as required Supervi--sors and Overseers who have had good experience in works are sent over as teachers I find in my experience that this system is very necessary to - raise the efficiency of the teaching These Of--ficers may be borne on the D P W list and their pay also debited to the same Department Only -- they will work for the time being under the Inspec--tor General of Education This circulation of - some officers between the Executive and Educatiora Establishments will be of much benefit to both

This is a de--sirable inno--vation

(Id) V R I

No Their pay will be debited to the Educa--tional Deptt

P T O

2 Subjects -

It is highly necessary that the standard of teaching should not be inferior to that in simi -lar classes in Madras It is only a small frac- -tion of those that pass that are employed in -- Mysore A large number go to Madras and other - places and to Railways for employment If an im- -pression gets abroad that the teaching is inferi- -or we shall be throwing an obstacle in the way of of our students On the other hand if additional subjects not taught elsewhere are introduced, the course may become difficult and the school unpopu- -lar

I agree But too much theory does them no good Let the teaching be - made more practi- -cal

Yes Certainly

Of the subjects we have, I think we may - safely omit Trignometrical Surveying which is of - no use to any student in after life unless he -- joins Topographical Survey Party of India This means we can do away with a large portion of Tri- -gnometry which we are now teaching and content - ourselves with teaching logarithms along with sur- -veys Every year we used to form a Trignometri- -cal Survey Camp In its place we can have a -- tank or channel project camp which will give the - students plenty of experience in Surveying and - Levelling

This is very desirable

3 Examinations -

At present it is compulsory for all the - students to appear for and pass the Madras Govern- -ment Technical Examinations Every year we re- -mit to the Madras Government not less than RS 600 and this tells heavily on the purse of poor stu- -dents In return we have also to bear all the -

expenses

expenses of the examirations and even Superinten--dents are not paid Our school is not reckoned as a "Recognized Institution" by the Madras Govern--ment for the purposes of these examinations , but treated as a private school These examinations commence after our own examinations and last for about twenty or sometimes twenty five days , so - that a whole month, if not more, is wasted by the boys for these examinations, there is also the se--vere mental strain of the examinations lasting - for such a long time I would think that the ap--pearance for these examinations be made optional to the students This will give us twenty more working days at least in the year and that is a - great deal for a school like ours where we have to finish all the subjects in two years In Madras for the same subjects they take three years I - am personally inclined to think that the course - for Sub Overseers should be kept at only two years Their prospects are not very bright and the condi--tion of the students we get to the school is in - keeping with the prospects extremely poor In--crease in the course by one year will prevent many an otherwise worthy students from study I am in--clined to think that we may work a little more and keep the course only two years long

Yes Certainly

Yes But make the practical course compulsory

Another alteration I would propose is, that the December holidays be abolished The Summer - holidays may begin from 1st May and extend to 1st - of July In the Madras College, it extends to - July 15th This will prevent disturbance in our - work

Yes I quite agree

I think one month will do

work as for a few days after each vacation the - work of the school will suffer Now, so far as - the boys are concerned the school is practically - closed from April to July

Yes

The Entrance Examination for admission may be held in the latter part of April instead of in June as at present Then the students who want - to join the school will have full time for prepa- -ration

4 Discipline & Management -

The discipline of the school of course -- rests entirely with the Head Master Admissions should be settled by a small Committee on the re- -commendation of the Head Master and accepted by - the Inspector General of Education The Committee of the school hardly meets more than once a year I believe it may be desirable they should meet at least four times every year and approve of all - that is proposed to be done The Inspector Gene- -ral of Education is of course the President of - the Committee The Head Master may have the -- power of fining or suspending or dismissing the boys and peons or lascars He may be allowed to fine his subordinates say up to one rupee He should be solely responsible - for the attendance and good conduct of the boys - and the progress of the school Either the Head Master of the Engineering School or of the Indus- -trial School may be appointed as Secretary in ad- -dition to his own work There is not I believe enough of work for a separate Secretary ~~and~~ since he is not an administrative officer holding power over either of the heads of these schools I be- -lieve there will be no difficulty in making one of them act as the Secretary

Should meet once a month

The Head Master may have the - same powers as the Head Masters of other Govt High Schools

It is better to have a separate Secretary

The Accountant of the Industrial - Section can work for this Section ~~for~~ 2 hours each day A separate Ac--countant is unne--cessary

Trained clerks may be appointed

It seems necessary to me that an Accountant or a Cashier should be sent to be in charge of the ac--counts of the two schools by the Comptroller as in all Executive Divisions The audit also should be annual and similar to that obtaining in Divi--sions Trained D P W writers should be sent to these schools instead of the present untrained - clerks These steps , I believe, are very neces--sary in the interests of maintaining a proper - system of accounts and correspondence

(Sd) B C Sreenivasaiengar,
Head Master,
Engineering School, Mysore

CHAMARAJENDRA TECHNICAL INSTITUTE

- MYSORE -

1 Industries & Crafts Section -

Instructions will be imparted in the following -

(1) Carpentry and Cabinet-making
(2) Smithy and Fitter's work
(3) Metal work (brass, copper & bell metal
(4) Rattan and mat-making
(5) Wood-carving
(6) In-laying
(7) Engraving

2 The training imparted to the students will be essentially of a practical nature

3 A certain amount of general elementary education in English, Vernacular and Arithmetic will also be imparted as it will be found of much use to the students in their future career

4 The course of training in each of the above branches will be one of three years followed by a further course of two years in the Workshops where the students will be employed on regular work and paid according to their skill and efficiency

5 The number of students that will be admitted yearly to the different sections will be as follows making in all a total of 65 per year

(1)	Carpentry and Cabinet-making	20
(2)	Blacksmithy & Fitter's work	10
(3)	Metal work	10
(4)	Rattan work	10

(5)	Wood-carving	5
(6)	In-laying	5
(7)	Engraving	5
		65

6 Admissions to this section will be made in - the first week of July of every year

7 Boys seeking admission shall ordinarily be - above thirteen and below sixteen years of age -- They should also have received a certain amount of general education, say, corresponding to the second standard

8 No fees shall be levied, but students should provide themselves with the necessary books and - drawing instruments

9 Workshop tools, drawing boards, T-Squares & Set-Squares will be provided for by the Government

10 The hours of attendance will be from 8 to 12 A M and from 2 to 5 P M From the second Monday - in April to second Monday in May, the school will - be held only from 8 to 12 A M

10 Out of the total number of hours of daily - work, two hours will be spent daily for drawing & general education

11 The session or year commences on first Monday, in July and will consist of two terms The first term commences on the first Monday in July and ends on the 24th December The second term commences - on the 5th of January and ends on the 30th of June

12 Examinations -

A Board of Examiners will be constituted by

the Government for the purpose of holding examina--tions and granting of diplomas

13 An examination will be held yearly at which the students who have completed their three years - course and attended not less than 75 per cent of the number of working days will be allowed to sit The examination will be both oral and practical Such of the students as satisfy the board of Examiners - will be given a certificate, which certificate will be exchanged for a diploma after the completion of the two years course in the Workshop

14 Any student who may fail in the examination - at the end of the third year will be allowed to con--tinue for another year and appear a second time for the examination But if he fails to pass even then he will not be allowed to continue in the school, - but may be allowed to come up for the examination at any future time as a private pupil He will be - given only a certificate and will not be eligible - for training in the Workshop

15 Scholarships -

A certain number of scholarships will be awarded every year to deserving students ranging in value as below -

1st year	RS 2/- per month
2nd year	RS 4/- per month
3rd year	RS 6/- per month

16 Every stipendiary pupil of the Institution - shall execute a bond prescribed by the Government of Mysore to bind himself to attend the school continu--ously for a period of five years including the two years course in the Workshop

17 Boys seeking admission will not be given - any scholarship for the first three months, but at the end of this period, they will be given the - scholarship of that standard if they are found re--gular in attendance and hardworking

18 Pupils will be entitled to fifteen days - casual leave in the year, but not more than four days in any particular month They will also be entitled to sick leave without forfeiting their - stipends for a period of not more than one month - in the year if they produce a Medical certificate

19 A fine of half anna calculated on every - rupee of stipends for every day of absence over & above the 15 days of casual leave shall be deduct--ed from the stipends Late attendance will be - treated as absence without leave for a full day

20 Every stipendiary pupil shall, for the 1st three years after he leaves the school furnish the Superintendent every half year in January and in - July with information regarding his occupation and the monthly wages he earns The Superintendent - shall enter the information in the history of the pupils of the Institution

Initial Outlay -

An initial grant of RS 10,000/- for the pur--chase of Machinery, Models, Furniture and Materi--als for the school will be necessary

Expenditure -		Maximum		Minimum	
STAFF -	One Superintendent	350	per month		
	One Assistant	125	do		
	One Accountant	75	,,	50	a month
	One Store clerk	40	,,	30	do
	One Typist	30	,,	25	do
	One Clerk	25	,,	20	do
	Total	645		125	

Instructors for -	Maximum	Minimum
Cabit-making	40	30
do	30	25
do	25	20
Smithy	30	25
Metal work	30	25
Wood-carving	50	40
Rattan work	30	25
Inlaying	40	30
Engraving	40	30
General Education	25	20
do	15	15
Total	355	285

Menials -	
One Head peon	8
Two peons at RS 7/- each	14
Four watchmen at 8 each	32
One Sweeper	7
One Cleaner	7
Total	68

	Per Month	Per Year
Total of Staff	RS 1,000	12,000
do Menials	68	816
Total of Staff & Menials	RS 1,068	12,816
Scholarships	RS1,000	12,000
Materials	350	4,200
Tools	100	1,200
Contingencies	112	1,334
Prizes		200
Travelling allowances		160
Library and Periodicals		250
Grand Total		32,160
Or say in round figures		32,200

CHAMARAJENDRA TECHNICAL INSTITUTE

- MYSORE -

~~Fine~~ Arts Section -

Instructions will be imparted in the fol--lowing branches -

(1) Portrait and Painting &c

(2) Decorative Art (Screen painting , book illustrating &c)

(3) Modelling

2 The number of students that will be admit--ted yearly will be restricted to fifteen, the -- strength of the Section being limited to fifty

3 The course in this Section will extend from three to five years

4 Rules Nos 3,6,7 8,9,10,11,12,13,16,17,18, 19 & 20 of the Art Industries and Crafts Sec--tion shall apply to this Section also

5 Pupils of other schools and persons desiring to learn any of the above branches will be given - instructions in the morning from 7-30 to 10 A M - every day on payment of the following fees

(1) Pupils of other schools - Four annas a month

(2) Other persons - One rupee a month

Lady students may also be admitted on payment of the usual fees

6 The control of this Section will be under the Superintendent of Industries and Crafts Section

The recurring expenditure will be as under -

P T O

1 Staff

	RS
Three Drawing Masters on (RS 80/-, RS 50/-, RS 40/-)	170
One Instructor for modelling	40
	210

2 Establishment

One gardener	8
Contingencies	2
	10
Total of Staff and Establishment	220
Drawing papers, Color &c	20

3 Scholarships

Stipends at RS $\frac{20}{2}$, $\frac{20}{4}$, & $\frac{10}{6}$ per month	180
Total expenditure per month	420
do per year	5,040
Travelling allowances per year	160
Prizes &c do	100
Total	5,300

202

CHAMARAJENDRA TECHNICAL INSTIT

- MYSORE -

Commercial Class -

A class for this may be established on the lines proposed for a similar class in Bangalore, a report regarding which has already been submitted - by Mr Shama Rao, Inspector General of Education

It was therein estimated that the nonrecur--ring charge will be about RS 6,000/- The recur--ring charges was estimated at RS 7,712/- But I think that it can be reduced to about RS 3,000/- as follows in the case of Mysore

Recurring charges -	Per annum
3 teachers for commercial subjects 1 on RS 75, 1 on 60 & 1 on 40	RS 2,100
One Clerk	360
Two peons at RS 7/- each	168
Contingencies	372
Total	RS 3,000/-

CHAMARAJENDRA TECHNICAL INSTITUTE

- MYSORE -

Workshop Section -

As observed by the Industrial Schools - Committee in their report in paras 45 and 46, the well equipped Workshop with up-to-date ap--pliances must necessarily be attached to the School and it must be managed on commercial - lines For the purpose of control and super--vision, it will be under the Superintendent of Industrial School, but the accounts will be -- kept separate, so that it may be possible to - judge how far the Workshop is commercially suc--cessful It is proposed that the Workshop be worked as a separate branch of the Industrial School on the following lines -

1 With effect from 1st July 1913, the Work--shop Section of the Industrial School will - form a separate department of the School under the general supervision and control of the Com--mittee The direct management will contirue in the hands of the Superintendent

2 On July 1st, a stock will be taken of raw materials and manufactured articles on hand and the same will be taken over and brought in the books of Workshop after a careful and reason--able valuation

3 A sum of RS 13,000/- is to be placed at - the disposal of the Committee at the Mysore - District Treasury as a standing advance, which will form the working capital

P T O

Timber	RS 5,000/-
Metals	RS 2,000/-
Labour	RS 2,000/-
Tools and Plant	RS 2,500/-
Miscellaneous articles	RS 1,500/-
Total	RS 13,000/-

4 As recommended by the Industrial Committee - in para 408, page 11, a sum of RS 25,000/- will be required for equipment As RS 10,000/- has al--ready been allotted for the School, the balance of RS 15,000/- may be allotted for the equipment of the Workshop Section

5 All sums received at the sale of articles - will be paid into the Treasury and credited to the accounts of the Committee

6 The Committee will be responsible for the pay of the workmen and all other working expenses in--cluding such establishment as the Committee con--sider necessary

7 The sum paid to the students as wages during the last two years in the Workshop will also be - included as wages in Workshop expenditure

8 The whole of the staff will be on temporary footing and they will be paid by the day

9 The accounts will be audited once a year by the Examiner and the value of stock and the mate--rials at hand being checked by a senior P W D - Officer

No 343 / E C Encs 2

1876

09-10
Edu
462
19

From K Subba Rau, Esq , B A ,
Provisional S cretary to the
Mysore Economic Conference
Bangalore

To
The Secretary to the Government of
His Highness the Maharaja of Mysore
General and Revenue Departments, Bangalore

MYSORE ECONOMIC CONFERENCE

Bangalore, the 20th September *1912*

Sir

With reference to your letter No 298/Edn 462-09-15, dated 9th July 1912 forwarding a copy of the Draft Report of the Committee appointed for the Improvement of the Industrial Education in the State and requesting that the matter may be placed before the Education Committee of the Economic Conference, I am directed to submit herewith copy of letter No 59, dated 5th September 1912, from the Secretary, Education Committee, together with a copy of Resolutions I to IX passed at the meeting of the Committee, held on the 24th August 1912

I have the honor to be,
Sir,
Your most obedient servant

K Subba Rau

Provisional Secretary

206

Letter No, 59, dated 5th September 1912, from the Secretary, Education Committee, to the Provisional Secretary, Mysore Economic Conference

Encl to 5 & 19

With reference to your Memo No 22/E C of the 13th July 1912, forwarding copy of letter No 298/Edn 462-09-15, dated the 9th idem, from the Secretary to Government General and Revenue Departments, inviting the opinion of the Education Committee in regard to the draft Report of the Committee appointed for the improvement of Industrial Education in the State, I have the honour to forward herewith a copy of Resolutions I to IX passed at the meeting held on the 2 t August 1912

'Copy'

K Subba

Provisional Secretary

Ed

Proceedings of the Government of His Highness the Mahārāja of Mysore -

Compl
306710-12
2968-12-668
13-5-1913

Read -

(1) Correspondence ending with letter No 86 dated the 10th September 1912 from the Special Commi tee appointed in Government Order No 3589-97Edn:402-03-2 dated the 28th October 1910 to consider the subject of the imorovement of Industrial Education in the State and to submit a detail ed report in the matter

(Here print the letter in extenso and print the report as an appendix)

This may be printed, after which to need not be printed in type Ms.

24/4/13

(2) Letter No 343 dated the 20th September 1912 from the Provisional Secretary to the Economic Conference submitting the Resolution of the Education Committee of the Conference on the scheme for the improvement of Industrial Education prepare by the Committee appointed by Government

(Here print the resolutions)

(3) Letter o 9177/506 dated the 14th/17th February 1913 from the Inspect General of Education in Mysore submittir proposals for opening a Mechanical Engi neering School at Bangalore

(Here print the letter with enclo sures)

(4) Memorandum on the establishme of Commercial Classes in Bangalore re ed from the Inspector General of Educ with his letter No 432 dated 24th eb 1913

(Here print the Memorandum in ex

(5) Memorandum on the re-organization of the Engineering and Industrial Schools at Mysore and the working of the Chamarajendra Technical Institute at Mysore received from the Inspector General of Education with his letter No 1142) 21 Dt the 30th April 1913 ~~dated 20th March 1913~~

(Here print the Memorandum in extenso)

Order thereon No 8834-40 Edu 62-09-24 dated 1 5 13

The question of improving Technical and Industrial Education in the State has been engaging the attention of Government for several years past and in October 1910 a Special Committee was appointed to examine the whole subject and submit a report on the measures deemed necessary for the purpose The exhaustive report prepared by that Committee has received careful scrutiny at the hands of the Education Committee of the Mysore Economic Conference The scheme embodies a comprehensive programme of elementary and advanced technical industrial and commercial education and contemplates a capital expenditure of about 5 lakhs of rupees for buildings and equipment and a recurring expenditure of 3 lakhs per annum in addition to the present expenditure of about half a lakh on Industrial Schools

2 The Education Committee recommend that the scheme may be taken as a basis for practical action for the next five years and that the full scheme may be brought into operation gradually as circumstances permit The Government have considered the

report and are pleased to express their general approval of the lines laid down therein for the development of Industrial Technical and Commercial Education in the State The report will be published for general information and Government will be glad if the Inspector General of Education makes arrangements to have the portions of the report relating to Manual training and Model Schools in towns and villages translated into Kannada and widely published They consider that as suggested by the Education Committee, the scheme should be brought into operation gradually ~~in the course of some years~~ and that in the immediate future some parts of the scheme should be put into operation at a moderate outlay and in a tentative manner so as to find out how far the advanced instruction will be taken advantage of before giving effect to the more costly proposals

3 In this view Government have examined the detailed proposals received from the Inspector General of Education regarding the establishment of a Mechanical Engineering School at Bangalore the opening of a Commercial School or Classes in Bangalore and the organization of the Chamarajendra Technical Institute in Mysore by the amalgamation of the existing Engineering and Industrial Schools in that City

4 The proposals of the Inspector General of Education meet with the general approval of Government and their main lines as approved by Government are briefly set forth in the following paragraphs -

I <u>The Chamarajendra Technical Institute, Mysore</u>

(a) The Industrial School and the Engineering School at Mysore will be combined ~~together~~ to form the nucleus of the Institute which will be located in the new building now nearing completion For the present the Institute will consist of the following sections -

I Engineering Section

II Industries and Crafts Section

III Fine Arts Section

IV Commercial School Section

V Workshop

(b) The institute will be under the management of a Committee consisting of the following gentlemen -

The Inspector General of Education President

The Superintending Engineer- S Circle

The President Mysore City Municipality

The Superintendent Electrical Power Supply Mysor

Mr M Venkatakrishnayya Head Master Marimallapp's High School

The Head Master Engineering Section

The Head Master Industrial Section

Mr S Srinivasa Iyer, Asst Engineer Palace Division, will be Secretary to the Committee

(c) The cost of the Institute as approximately estimated will be as follows

		Recurring	Non-recurring
(i)	Engineering Section(Net cost)	11,000	
(ii)	Industries & Crafts Section		
	Initial outlay for machinery models furniture & materials		10,000
	Staff and menials	12,816	
	Scholarships	12,000	
	Materials	4 200	
	Tools	1,200	
	Contingencies	1,334	
	Prizes	200	
	Travelling allowance	160	
	Library & Periodicals -	250	
		32 160 or	
	in round figures- 32 200		
(iii)	Arts Section		
	Staff establishment scholarships & contingencies	5,040	
	Travelling allowance	160	
	Prizes etc	100	
		5,300	

		Recurring	Non-recurring
(iv)	Commercial School equipment		6,000
	Staff & Contingencies	3,000	
(v)	Workshop		
	Equipment		15,000
	Working expenses		13 000
(vi)	Allowance to Secretary to the Committee	600	

The workshop will be managed on commercial lines and separate accounts will be kept for this section A lump sum grant of Rs 13 000 will be placed at the disposal of the Committee for working expenses as laid down in the scheme

The total cost of the Institute will be non-recurring Rs 31,000 (excluding the advance of Rs 13 000 for the workshop) and recurring Rs 52,100 or an increase of nearly Rs 20,000 over the present net cost of the existing Engineering and Industrial Schools

The expenditure under scholarship should for the present be limited to Rs 500 per mensem The Inspector General of Education should in consultation with the Committee fix the number of scholarships, and no scholarships in excess of this amount should ~~not~~ be granted without the express sanction of Government

(d) In the Sections other than the

Engineering Section facilities should be provided for persons already engaged in a profession and other casual students taking one or more of the courses in which they may be interested, and for doing practical work

II Commercial School, Bangalore

(a) The School will provide an elementary course in English and Kannada extending over one year and a Secondary course in English extending over two years In addition to these regular classes arrangements will be made for courses of lectures of an advanced character to be delivered by specialists dealing with commercial subjects economic science statistics public administration banking joint-stock enterprize including co-operation and other allied subjects Provision should be made to give courses of lessons or lectures to persons already engaged in professional work in the subjects in which they may be interested

(b) The school will be located in the Government High School building where one room will be placed at the disposal of the school and more rooms will be made available out of the ordinary working hours of the High School

(c) The management of the school will be entrusted to a Committee consisting of the Inspector General of Education as President Mr J C Chakravarti Comptroller,

Mr C H Yates, Superintendent Government Press Mr B K Garudachar merchant the Superintendent of the Mechanical Engineering School and the Head Master of the Government High School as members, the Head Master of the High School also acting as Secretary to the Committee

(d) The cost of the school will be approximately as under -

(1) Non-recurring- Equipment -		Rs 6,000
(2) Recurring -3 teachers for commercial subjects		2,100
5 language teachers		1,560
Clerical & menial establishments		792
Contingencies		500
Allowance to Secretary		360
Honoraria for special courses of lectures		4,000
Provision for training teachers -		1,400
Total		10,712

or Rs 11 000 in round figures

III Mechanical Engineering School

Bangalore

(a) The following subjects will be taught in the school for the present -

(1) Management and care of steam and oil engines

(2) Management, care and erection of machinery and working of mills

(3) Electrical work including ~~operating~~ operating

(4)

(4) Care & driving of motor cars

and

(5) Carpentry including cabinet work

(b) The initial and recurring charges are estimated as under -

Buildings & equipment (non-recurring)	Rs 24 049
Staff including clerical and menial establishments working expenses contingencies & scholarships	19 620
(Limited to Rs 15 780 in the 1st year and to Rs 17,700 in the 2nd year)	

The scholarships proposed should be granted preferably to students from the Districts

(c) A new building will be erected for the school on the triangular piece of ground between the Government High School and the Revenue Survey Offices, but pending its construction the school will be held in the Seshadri Memorial Hall

(d) The curriculum of studies the standard of educational qualifications and the limit of age for admission proposed by the Inspector General are approved Government would however lay stress on the need for providing facilities ~~for~~ to persons already engaged in professional or other work for taking a course of practical work in particular subjects in which they may be interested

(e) Government are pleased to appoint Mr S Venkatasubba Setti Assistant Engineer as Superintendent of the School for

a period of three years

(f) The School will be placed under the management of a Committee of the following gentlemen -

The Inspector General of Education - President

Mr C F Beames Chief Electrical Engineer

Mr V Rangaswami Iyengar Offg Supdtg Engineer

Mr K Sreenivasa Iyengar Offg Ex Engineer

Mr I G Ranganaya Assistant Engineer

Mr Ramachandra Rao Scindia Merchant

Mr S V Venkatasubba Setti Superintendent of the School Secretary

5 Government having signified their assent to the general lines of the working of the several schools as set forth in the Committee's report on technical education and the detailed memoranda submitted by the Inspector General of Education it will be left to the Inspector General of Education in consultation with the Committee of each school to scrutinize the details and make such minor changes and frame subsidiary rules and instructions as may be necessary to secure the efficient working of each institution he Inspector General of Education should in particular see that the cost of the several institutions does not exceed the limits indicated in this order

6 The members of the several Committees appointed above will hold office for a year and will be eligible for re-nomination at the end of that period The Committees will have, subject to the general control of the Inspector General of Education full power to deal with all questions of internal management of the institutions concerned and will meet as frequently as necessary for disposing of their work Members who absent themselves from three consecutive meetings of the Committee will be held as having vacated their seat on the Committee

7 It will be the duty of each committee to send to the Inspector General of Education and for that officer to forward to Government half-yearly reports of the work and progress of each school At the close of each year Government will appoint a separate committee to inspect these institutions and examine how far each of them has been working efficiently and fulfilling the objects for which it was - - started

8 With the exception of men already in the permanent service of Government the staff employed in all these schools will be placed on a temporary footing

9 The cost of maintaining the Mysore Industrial School and the Engineering School is now charged to Local Funds General The present rate of expenditure

is

is Rs 32,000 per annum All expenditure in excess of this amount involved in bringing the three institutions sanctioned in this order into existence will be borne by State Funds

10 The question of granting foreign scholarships and the deputation of officers to foreign countries for the advanced study of industrial and commercial subjects are reserved for separate consideration

11 The Inspector General of Education is requested to submit a detailed report on the working of the existing industrial schools both Government and aided with suggestions and proposals for enhancing their usefulness

12 Government will welcome proposals from local public bodies or committees for the starting of schools in the Districts on a grant-in-aid basis on the lines laid down in paras 14 15 17, 70 101 102 and 113 of the report of the Committee The Inspector General of Education will on receipt of such proposals make arrangements to furnish estimates of cost and afford such other reasonable facilities as may be necessary to start the schools and maintain them in an efficient condition

13 Government greatly appreciate the promptitude with which the Inspector General of Education and Mr V Rangaswami-Iyengar Superintending Engineer ~~have~~ developed

developed and submitted these detailed schemes for the orders of Government

19 4 13

19/4/13

Secretary to Government

To The Inspector General of Education in Mysore

The Chief Engineer in Mysore

The Secretary, Economic Conference

The Director of Industries and Commerce

The President Mysore City Municipality

The Comptroller Mysore Government (through Branch II), with the intimation that Mr S Venkatasubba Setti may be allowed to draw salary and allowances at the same rates as in the Electrical Department while he employed as Superintendent the Mechanical Engineering School Bangalore

The Chief Electrical Engineer in Mysore

with a request that he will make the necessary arrangements to relieve Mr Venkatasubbasetty at an early date to enable him to take the preliminary steps for opening the school. He may also be allowed to work as an Operator twice or thrice a week for at least three or four hours each time without prejudice to his work in the Mechanical Engineering School so that he may not lose touch with the Electrical Department for which he has been specially trained